



THE SUOMI SUBMACHINE GUN

LEROY THOMPSON





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INTRODUCTION

The Suomi submachine gun (SMG) saw extensive combat with the Finns against the Soviets during the Winter War (1939–40) and the Continuation War (1941–44), and against the Germans during the Lapland War (1944–45). Arguably, it may have accounted for more dead Soviets than any other weapon used by the Finns since it was a favourite with ski troops who would strike from ambush, felling Soviet troops with the Suomi, then skiing away into the woods. Since the Suomi was designed to be more accurate than the typical SMG and was supplied with two barrels, both regulated to the weapon, it was often even used as a sniping weapon.

Initially, though, the Finns ‘misused’ the Suomi as a light machine gun (LMG) deployed in support of infantry. Once the Finns had a substantial number of captured Soviet Degtyaryov DP-28 LMGs, they replaced the Suomi, freeing it to be used in the more characteristic SMG role, though in many cases it continued to be used as a squad automatic weapon (SAW). A point worth noting with regard to captured Soviet weapons is that the rifles and machine guns were chambered for the same 7.62×54mmR cartridge used by the Finns, who also captured substantial amounts of Soviet ammunition. The Soviets did not use 9×19mm pistols or SMGs, however; hence, ammunition to feed the Suomi SMGs had to be produced in Finland or purchased from other countries.

The availability of a 50-round box magazine or a 70-round drum magazine, as well as the ability to change barrels to counter overheating, allowed the Suomi to perform the SAW role better than a typical SMG. The primary disadvantage of the Suomi during the assault was its weight, especially with the operator carrying the ‘standard’ ammunition load of five 70-round drum or seven 50-round box magazines. Note that in combat, this much ammunition was frequently only available when firing from an entrenched position, often with the assistance of a loader. The effectiveness of the Suomi was enhanced by issuing it to select soldiers



who were strong enough to carry it and its spare magazines and effective enough as marksmen to maximize its capabilities.

The Suomi remained in Finnish service from 1931 until the 1980s, an indication of its durability. In addition to the Suomi's service with the Finnish Army, Sweden produced its own version. Other countries that used the Suomi included Bulgaria, Denmark, Nazi Germany and Norway among others. The Soviets also captured Suomi SMGs during both the Winter War and the Continuation War. Copies of the Suomi were produced in Denmark, Sweden and Switzerland. In addition, the KP m/44 SMG, the Finnish copy of the Soviet PPS-43 SMG, was produced in Finland as a cheaper alternative to the Suomi.

Combat use of the Suomi was primarily in the Winter War, Continuation War and Lapland War. Since Nazi Germany ordered over 3,000 Suomi SMGs, presumably the weapon saw some use with German troops. Israel also acquired some Suomi SMGs and used them in the 1948 War of Independence. Sweden produced 35,000 of their version of the Suomi, but they would have seen little combat use unless after being sold to other countries or used by Swedish volunteers in the Winter War. Still, it was one of the weapons designed to ensure Swedish neutrality. One interesting user of the Hispano-Suiza MP 43/44 version of the Suomi produced in Switzerland was the Vatican Swiss Guard. Reportedly, the

Early in the Winter War, only one Suomi SMG per Finnish patrol was normally available, while other troops were armed with the Mosin-Nagant M1891 rifle. That appears to be the case with this patrol, as only the soldier second from the left has a KP/-31. As the Suomi proved its usefulness and more examples became available, a larger percentage of Finnish troops were armed with it. (SA-kuva)



A Suomi in use during the warmer months; note that the shooter rests the drum magazine on his palm, in much the same manner as a rifleman would rest the forearm of his rifle. (SA-kuva)

Suomi was also used in the Chaco War (1932–35) and the Spanish Civil War (1936–39).

As with other Finnish weapons, the Suomi was designed to be especially durable and to keep working in Arctic conditions. It was also designed to be easily maintained by replacing springs that wear. Just as Finnish soldiers who used the Suomi considered it an excellent weapon, so do most historians and collectors of World War II-era SMGs think highly of the weapon. It frequently makes lists of top infantry weapons of World War II. Those who used it lauded it, while those who faced it – normally the Soviets – feared it. It is important to remember that the effectiveness of the Suomi during the Winter War was one of the first instances in which the SMG's value was proven in combat. This in turn had at least some influence on the deployment of other SMGs during World War II. In a US intelligence report on Finnish tactics, it is stated that:

The chief offensive weapon of the Finns is the Suomi machine carbine, similar to our sub-machine gun ... Ordinary Central European military tactics demands [*sic*] fire beginning at long ranges in the form of artillery preparation and increasing gradually in intensity over a considerable period of time. Something entirely different is required for warfare in the Finnish woods. Here the weapons must be located far forward and maximum fire power attained immediately. This demands an automatic weapon which is light and mobile. This weapon must be unusually well-balanced to ensure good aim under difficulties incident to forest fighting. The Suomi carbine is the weapon which fulfills all these requirements. (Tactical and Technical Trends 1942)



DEVELOPMENT

Towards the Suomi

ORIGINS

As so much of Finland is forest, it has traditionally been a land of hunters and trappers; and like the United States, Finland has traditionally been a land of riflemen. After Finland declared its independence from Russia in December 1917, a civil war was fought between the 'Whites' who supported the independent Finnish government and the 'Reds', a revolutionary workers' movement sympathetic to the Soviet Union. Germany intervened on the side of the Whites, helping to defeat and disarm the Reds. Most of the arms captured during the civil war were Mosin-Nagant M1891 rifles, and this weapon would become the primary Finnish infantry weapon through the Winter War and Continuation War. Though Finland used the M1891 for decades, it did not manufacture its own rifles. Instead, the Finns would rebuild and upgrade rifles captured from the Russians, as well as some manufactured in the United States during World War I, and some French versions. Although Finnish marksmanship was generally excellent, and combined with a deep knowledge of the terrain to allow them to fire a few rounds from cover and then ski away, Finnish firepower was still limited.

The Finns soon realized the potential of the SMG. As early as 1922, the Finnish Civil Guard acquired Bergmann M/20 SMGs chambered for the 7.65×21mm Parabellum (.30 Luger) cartridge, the same cartridge used in Finnish Luger pistols. The M/20 was an improved version of the MP 18/I, which the Germans had used in World War I. Developed initially in 1916, the MP 18/I had been used primarily by 'Storm Troopers' who raided trenches and infiltrated behind enemy lines.

The Germans were banned from using SMGs after World War I, however, with the exception of a few for the police; hence, production was licensed to Schweizerische Industrie Gesellschaft (SIG) in Switzerland.



A left-side view of a Bergmann M/20 with magazine removed. The M/20 was produced in Switzerland by SIG and used by the Finnish Civil Guard during 1922–39. During the Winter War, the M/20 was used by the Finnish Army, but by the Continuation War it had been relegated to use by coastal forces and home-guard troops. While its German predecessor, the MP 18/I, had used Luger ‘Snail Drum’ magazines, the M/20 used standard box magazines. By 1932, the Civil Guard had purchased 1,415 of the M/20 SMG. It used the same 7.62×21mm Parabellum cartridge as the Finnish Luger pistols. The Finnish company Leonard Lindelof received a licence to produce Bergmann SMGs in 1922, but SIG undercut Lindelof’s price and few were produced. The M/20’s influence on the Suomi can be discerned in the rifle-style rear sight. (© Royal Armouries PR.7394)

Problems with reliability caused by use of the Luger ‘Snail Drum’ magazine were corrected in the M/20 SMGs supplied to Finland by SIG, as they used a 50-round box magazine. Although SIG produced the M/20 in 7.63×25mm Mauser calibre for some customers – especially the Chinese, who had large numbers of C 96 Mauser pistols, and for the Imperial Japanese Navy, whose version of the M/20 mounted a bayonet – those for the Finns were in 7.65×21mm Luger calibre.

By 1922, the Finnish Civil Guard had purchased about 1,000 M/20 SMGs from SIG. Over the next ten years another 415 Bergmann M/20s were purchased, though the Swiss had halted production in 1927. Owing to Finland’s desperate need for weapons, a further 108 MP/20 SMGs were purchased from Switzerland during the Winter War. Switzerland had offered Finland another 290 M/20 SMGs chambered for the 7.63×25mm



A Finnish Home Guardsman on watch with a Bergmann M/20 at the prisoner-of-war camp in Viipuri in September 1942. (SA-kuva)

Mausers round, but Finland demurred due to the complications of adding another calibre to the supply system (Jaeger Platoon 2013). As Mauser C 96 pistols were widely used by Finnish troops, however, 7.63×25mm ammunition should have been in the supply chain.

The MP/20 SMGs were used during the Winter War and Continuation War, and surviving examples remained in Finnish armouries until 1960. During the Continuation War, the M/20 SMGs were issued primarily to coastal-defence forces and some home-front security troops (Jaeger Platoon 2013). As was normal with Swiss arms, the M/20 was a high-quality weapon. However, according to Thomas Nelson, each magazine was hand-fitted and numbered (Nelson 1977: 439). This would seem to have presented a potential problem in combat, where magazines from different weapons could become mixed. The Finns were more cognizant of firearms operation and maintenance than many armies, however, which may have mitigated the problem. The M/20's side-feeding magazine may have also been a disadvantage for the Finns, as it would have had a greater tendency to catch on branches in the forests where the Finns operated.

A Finnish copy of the M/20 was produced under licence at Leonard Lindelof's machine factory, but – due to production problems – few if any were delivered to the Finnish Civil Guard, which had ordered them (Jaeger Platoon 2013).

Aimo Lahti, the inventor of the KP/-31, as well as other Finnish weapons. (SA-kuva)

TOWARDS THE SUOMI

Aimo Lahti, a weapons designer who lent his name to the L-35 pistol, the Lahti-Saloranta m/26 LMG and the L-39 anti-tank rifle, felt that the Bergmann M/20 SMG was expensive and did not perform to the high standards he set for weapons designs. Confident of his capabilities, Lahti believed that he could create a more effective SMG. After being hired in June 1921 as an armorer by the Keski-Suomi Regiment, Lahti began design work on his SMG. As part of its development, he had a reduced-scale model chambered for the .32 ACP (7.65×17mm Browning) cartridge fabricated by a local blacksmith. This scaled-down SMG was only 30cm in overall length; but despite its small size, it allowed Lahti to prove that his design was viable (Heidler 2015: 10).

The m/22

By 1922, Lahti had had the first full-sized prototype of his SMG built by the Leskinen & Kari Machine Works in Tampere. This version



was designated the m/22. Lahti received support from two ranking officers of the Keski-Suomi Regiment, Lieutenant-Colonel W. Hagglund and Lieutenant-Colonel E. Heinrichs, but when the weapon was sent to the Finnish Defence Ministry for evaluation little interest was expressed. Lahti did not lose his resolve to create a more effective SMG, however. In June 1924, he established Konepistooliosakeyhtiö (Submachine Gun Ltd) with Captain V. Korpela, Lieutenant Y. Koskinen and Lieutenant L. Boyer-Spoof, all of whom were officers of the Keski-Suomi Regiment. The 150 shares were divided, with 45 each for Lahti and Korpela and 30 each for Koskinen and Boyer-Spoof. (As a side note, Boyer-Spoof later changed his surname to Poijärvi.) The company proved to be underfinanced, however, and Korpela soon left as a result of a marketing disagreement with the other shareholders – he had attempted to sell the SMG abroad without consulting them (Heidler 2015: 10).

The KP/-26

Lahti continued to improve his SMG design, patenting innovations in Finland. As development progressed, the Finnish Defence Ministry showed greater interest in the design, which was chambered for the same 7.65×21mm cartridge as the Bergmann. Konepistooliosakeyhtiö ordered 100 of the improved model from Ab Tool Oy in August 1924. Ab Tool Oy actually shared a large manufacturing facility with Leonard Lindelof Oy, which was producing copies of the MP 18/I, though not especially satisfactory ones (Kekkonen; no date). All parts for the 100 examples of the improved model were produced in Finland, with the exception of the barrels which were ordered from the UK and Swiss recoil springs which were ordered of the type for the Bergmann M/20. Barrels for the transitional SMG (later adopted as the KP/-31) continued to be imported from Birmingham Small Arms until 1930, when Tikkakoski Oy began producing barrels (Kekkonen; no date).

In February 1925, 13 examples of the SMG were supplied to the Finnish Ordnance Department for evaluation. Functioning of the weapons was good, but the evaluators identified two problems: the magazines were fitted to the individual weapons rather than being interchangeable, and the barrels were prone to corrosion. Still, the SMG was considered promising and, from the initial 100 examples produced, about 60 were supplied to the Finnish Army, with a few others going to the Civil Guard and Frontier Guard. In addition, five examples were supplied to Estonia for evaluation.

As produced, the SMG would be designated the KP/-26, though it appears that this designation was assigned after the fact to delineate the weapon from the later KP/-31. Contributing to the appeal of the KP/-26 was its cost – less than half that of a Bergmann M/20; about 2,200 Finnish Marks each compared to 4,500 Finnish Marks for the M/20 (Heidler 2015: 11).

Among the features of the KP/-26 were a quick-detachable barrel (as later used on the KP/-31) and a curved 36-round magazine. According to Nelson, the KP/-26 was the first SMG to use a quick-detachable barrel



(Nelson 1977: 557). Another feature specific to the KP/-26 was a buffer system that helped control the rate of fire. A four-position disc extension protruded from the rear of the receiver/buffer cap. Rotating this disc regulated the flow of air through five holes in the lower portion of the cap, thus retarding or increasing the rate of fire (Nelson 1977: 557). This ability to regulate the rate of fire would have proven useful if Suomi SMGs had been produced for export in 7.63×25mm or 9×25mm Mauser calibres. As with the US Thompson and Italian Villar-Perosa SMGs, the KP/-26 used a breech bolt, the front of which was rebated, to enhance reliability. A selector located on the right side of the stock could be rotated to 'VT' in the lower forward position for semi-automatic fire and to 'KT' in the portion of the selector disc for full-automatic fire.

As only 100 of what would be designated the KP/-26 were produced, the weapon saw little combat use, though during the Winter War and Continuation War it was issued for guard duty on the home front. So few KP/-26 magazines were produced that only two were issued with each SMG (Jaeger Platoon 2013).

The KP/-26 was the earliest version of the Suomi SMG. Chambered for the 7.62×21mm Luger cartridge, it used a very distinctive curved 36-round magazine. As with the later KP/-31 Suomi, the KP/-26 had a quick-detach barrel system. Production during 1925–26 amounted to around 100 SMGs. They never really saw combat, though during the Winter War some were issued to Home Guard troops. Since the KP/-26 never made it into mass production only a small number of magazines were produced. As a result, only two magazines were issued with each KP/-26 during the Winter War. With a cyclic rate of 600–750rd/min, those magazines would have been emptied quickly. (© Royal Armouries PR.7654)

The KP/-31

One problem with the KP/-26 was the curved magazine, which did not feed reliably. Lahti also felt the stock was not sturdy enough to withstand sustained combat usage. Some reliability problems had also manifested themselves as a result of the incorporation of some features of the Bergmann design. Reliability was enhanced significantly by a major change that saw the elimination of space in front of the bolt that often allowed a cartridge to turn and fail to feed; and by the use of a new 20-round box magazine and 40-round drum magazine designed to take the 9×19mm cartridge, for which Lahti chambered the updated KP/-26. Modification of the magazine well allowed the use of drum magazines as well as the Swedish 'coffin' magazine, while modifications to the barrel jacket made it simpler to produce and sturdier. A quick-release lever



Production of the m/26 began in 1927, though it had been designed during 1925–26. Between 1927 and 1942, more than 5,000 m/26 LMGs were produced in 7.62×54mmR. China had also placed an order for 30,000 m/26s chambered in 7.92×57mm Mauser, but only 1,200 were delivered. Although both 20-round box and 75-round drum magazines were available for the m/26, the Finns seemed to prefer the 20-round box magazine, as shown in this photograph. The m/26 proved heavy, with low magazine capacity, and with too many parts making it hard to clean and maintain. During the Winter War and Continuation War, the Finns preferred to use captured Soviet DP-28 LMGs. (© Royal Armouries PR.7283)

The Lahti-Saloranta m/26 LMG

After Aimo Lahti had designed the m/22 SMG prototype for the Suomi, it was suggested that he should design an LMG. By the end of 1923, he had produced blueprints for just such a design; after which he received directions from the AV 1, the Weapons Depot in Helsinki, to proceed with the design and was assigned a technical expert, Lieutenant A.E. Saloranta, to assist him. Between June and August 1925, a prototype was produced that used a short barrel recoil system (i.e. the barrel and bolt only stayed locked together for a short distance before unlocking) similar to that of the French Chauchat and Danish Madsen LMGs. Magazine capacity for an LMG was low, as the weapon used a 20-round curved magazine.

The Lahti-Saloranta design was tested against various foreign weapons and won the trials, in part because it had been chambered for the 7.62×54mmR cartridge, which was the standard Finnish rifle round. Two additional Lahti-Saloranta weapons were next produced for further testing, after which the LMG was adopted as the m/26. Production began at VKT, the state rifle factory in 1928. The m/26 was, in fact, the first weapon produced at the new factory. The initial military order was for 200 examples, with Saloranta assigned to help VKT with production tooling and

set-up. Owing to production problems, however, the first m/26s were not delivered until February 1929.

By the end of March 1929, only 20 m/26s had been produced. As a result, an inspection committee was sent to VKT to inspect the first production examples off the line and determine the cause of the production problems. It turned out that Saloranta had caused many of the problems by making unauthorized changes to the blueprints, resulting in the first production examples not passing inspection. Saloranta was removed, and an engineer named K. Veltheim was appointed to manage VKT, with Aimo Lahti in charge of supervising production of the m/26 LMG beginning on 17 July 1929.

Still, the first contract for 200 m/26 LMGs was not completed until 1930. Production rapidly increased, though, with around 4,000 delivered by the autumn of 1939. By June 1942, enough additional examples had been produced to give the Finnish Army an inventory of about 4,600. Many were subsequently lost in combat during the Continuation War, however, especially during the battles of 1944. As a result, by August 1951, only 3,377 m/26s remained. During the mid-1980s to early 1990s the surviving weapons were declared surplus and scrapped or sold to collectors.

The Lahti-Saloranta m/26 LMG was select-fire and had a quick-change barrel, which took about 30 seconds to switch out. Its rear sight was adjustable between 300m and 1,500m. It has a separate safety and selector switch, the safety in the front of the trigger guard and the selector in front of that.

The m/26 did not have a good reputation with Finnish soldiers, its magazine capacity being one problem. As the magazine only held 20 rounds, the standard issue with each LMG was up to 90 magazines – a substantial amount of weight to be distributed among an infantry squad in eight-magazine canvas bags. It also lacked a flash hider, which was a distinct disadvantage since the barrel was only 50cm long. A bipod was provided but it was too fragile; and when it was necessary to reload magazines, the springs were so stiff that a loading tool had to be used.

Unlike most Finnish weapons, which are known for their reliability, the m/26 had a reputation for malfunctions. Aimo Lahti attributed this to the practice of shipping the weapons from the

factory with the recoil-spring assembly inside the stock heavily greased. Because only armourers were trained to remove the springs and clean them, m/26s were issued with grease still caked in the springs. The tight tolerances to which the weapon was built also probably contributed to its poor reputation. It had an especially bad reputation in harsh weather conditions – not a good thing in the Finnish winter. In fact, the nickname for the m/26 among Finnish troops was 'Accumulated Malfunctions Model 26'.

When evaluated in comparison to later designs, the ergonomics of the m/26 are poor. For example, when charging the weapon, the cocking handle has to be pulled to the rear, then returned to the forward position. Recoil is also noticeable, though the cyclic rate (450–550rd/min) should make it relatively controllable. On a positive note, the m/26 did have a reputation for being very accurate. Probably the most telling comment on the m/26 is that Finnish troops normally preferred the captured Soviet DP-28 LMG to their own design.



An m/26 in action during 1941; note the lack of a flash hider, the 20-round curved magazine and the rather flimsy bipod. (SA-kuva)



This is an example of the earliest version of the KP/-31 Suomi that was equipped with a wooden vertical foregrip. This model often also had a bipod. These features would have aided in its early use as a squad LMG. This version was produced by Tikkaskoski Rauta ja Puuteollisuusyhtiö. When the Finnish Army placed its first order, it was given the military designation '9,00 *Konepistooli M/31*'. It is shown with the drum magazine – presumably the early 40-round version – in place and the selector switch located at the front of the trigger guard is in the full forward position for automatic fire. (© Royal Armouries PR.7656)

allowed the barrel to be changed quickly. As a rudimentary muzzle brake, the muzzle of the SMG was given a slanted cut.

Other changes included an increase in cyclic rate from 750rd/min in the KP/-26 to 900rd/min in the KP/-31 and a reduction in overall length from 92.7cm to 87cm. Weight of the KP/-31 unloaded and loaded was greater than that of the KP/-26 – 4.6kg unloaded and 7.04kg loaded with a 71-round drum magazine for the KP/-31 versus 4.4kg unloaded and 5.04kg loaded for the KP/-26.

The differential locking system of the KP/-31 is worth describing in some detail. The KP/-31 is a blowback, select-fire design. When the trigger was pulled, the firing pin, which protruded from the face of the bolt by about 1.25mm, impacted the primer, igniting the powder charge. At the point the firing pin impacted the primer, the bolt was not all the way forward, but the momentum of the bolt immobilized the cartridge case in the chamber until the chamber pressure was lowered enough for the remaining gas pressure to push the case out of the chamber, and the spent case pushed the breech bolt back against the recoil spring and the inertia created by the weight of the bolt. The bolt's mass gained velocity to overcome the momentum pushing it backwards until it met the diaphragm of the receiver's end cap, at which point the bolt went forward, chambering another cartridge; this process continued as long as the trigger was held back. Overall length of the KP/-31 was kept to a minimum by mounting the recoil spring within the bolt.

These design changes had been tested by late 1930 or early 1931, but the Finnish Defence Ministry had still not placed any orders (Jaeger Platoon 2013). Things improved when Tikkakoski Rauta ja Puuteollisuusyhtiö (Tikkakoski Iron and Wood Industry Ltd) under the leadership of engineer Oscar Ostman purchased the rights to produce the



A craftsman at Tikkakoski Oy assembles the receiver to the stock of a KP/-31. (SA-kuva)

KP/-31 SMG. At this point the company had some experience producing rifle and machine-gun barrels for the Finnish armed forces; hence, Konepistooliosakeyhtiö ended its part in the story of the Suomi SMG (Jaeger Platoon 2013).

Today, Tikki is still in business producing high-quality rifles in conjunction with Sako. (At one point, the Special Air Service used Tikki rifles for sniping.) The first time the designation 'Suomi' was used for the Lahti design was in a 1925 document. What is especially interesting about naming the SMG the 'Suomi' is that this is, in effect, calling the Lahti-designed SMG the 'Finnish,' the equivalent of calling the Thompson the 'American' or the Sten the 'British'. In September 1930, an important early mention of the Suomi SMG was in the *Hakkapeliitta* magazine, the publication of the Soujeluskunta (the Civil Guards). A little over a year later, in October 1931, the Finnish Army placed an order for 100 of the new SMG in 9×19mm

The bolt, end cap and spring are assembled into the tubular receiver of the KP/-31. (SA-kuva)



Final assembly of the KP/-31.
Annual Suomi production
increased from 1,172 in 1939 to
3,600 in 1940, 11,475 in 1941 and
13,067 in 1942, peaking at 15,933
in 1943 before falling to 11,600 in
1944. A total of 56,847 were
produced (Jaeger Platoon 2013).
(SA-kuva)

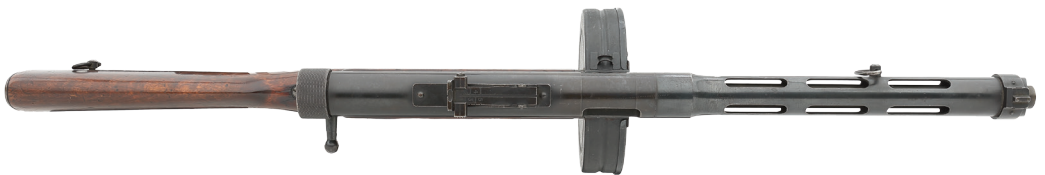
calibre. Its official designation was '9,00 konepistooli M/31' (9mm submachine gun M/31). Although Tikkakoski offered various options, including a bipod, vertical foregrip and two types of selector switches, the Finnish Army ordered the most basic version (Heidler 2015: 11).

Suomi SMGs required substantial machining to produce, as the receiver was machined from a solid Swedish chromium nickel steel forging. A tunnel for the breech bolt was bored, then honed, as was a narrower, concentric tunnel for the rebated neck of the bolt. Bolts were fabricated from the best Swedish steel, hardened to 55 Rockwell (Kekkonen; no date).





Right-side view of a KP/-31 SMG with a 20-round magazine in place; other magazines shown here are (left to right) 40-round drum, 70-round drum and 50-round 'coffin' box. (© Royal Armouries PR.7655)



Top view of the KP/-31 with drum magazine; note how the drum magazine dramatically increases the width of the Suomi. This view also illustrates that the cocking handle stuck out enough that substantial force could be used to kick it back to remove a stuck case or in cold weather. (© Royal Armouries PR.7655)

IMPROVING THE KP/-31

One criticism that arose among Finnish troops using the Suomi was that it had substantial muzzle climb during full-automatic fire. To counter this, two entities – the 13th Weapons Repair Company and the Finnish Army Ordnance Department – developed muzzle brakes for the KP/-31. As developed, the muzzle brake was 95mm long and 28mm in diameter. The brake increased the overall length of the Suomi by 55mm. After February 1942, all KP/-31 SMGs ordered for the Finnish Army incorporated the muzzle brake, but it was not fitted to those KP/-31s ordered for the Home Guard and for export (Heidler 2015: 16).

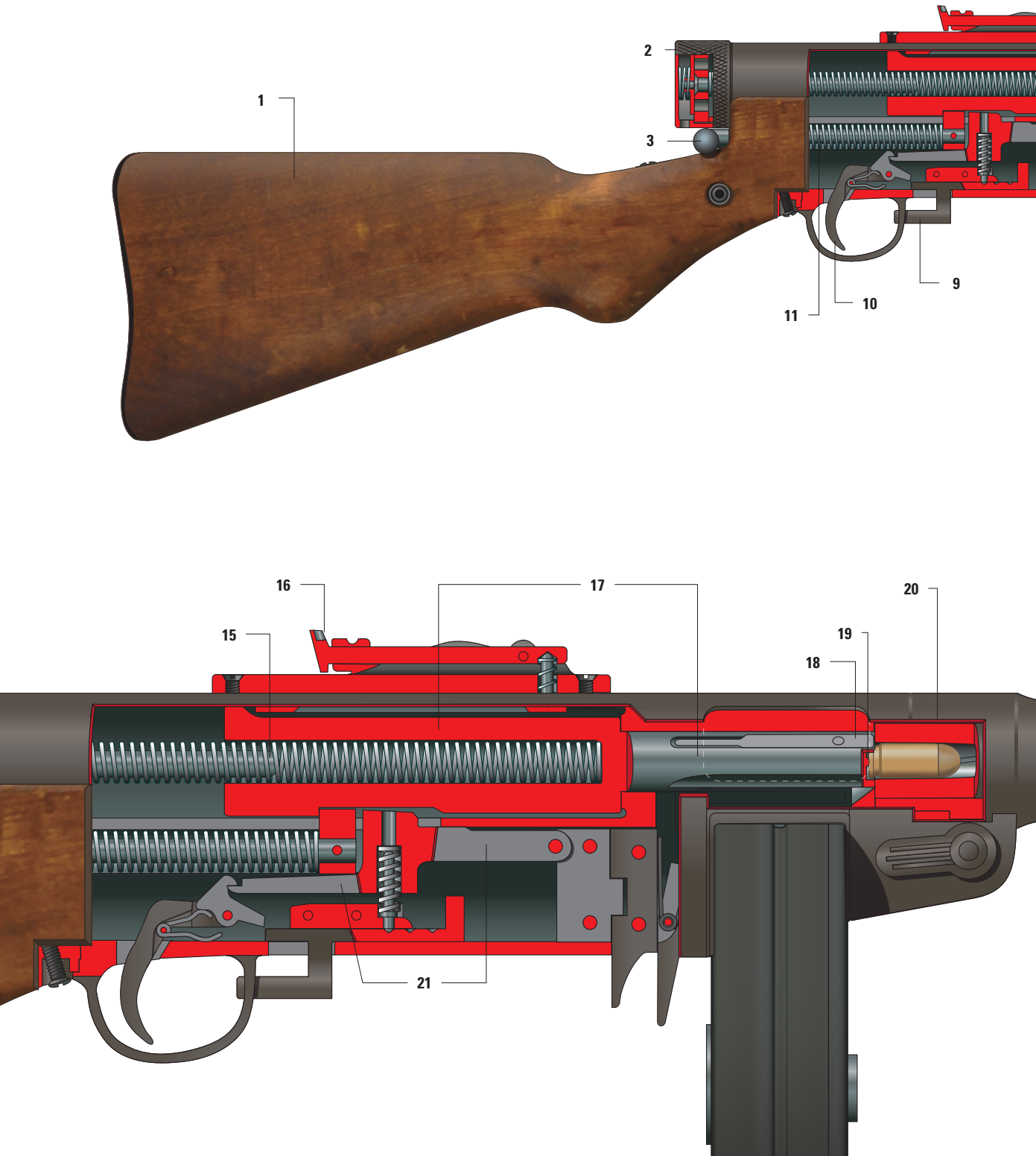
Aimo Lahti did not like the muzzle brake. In fact, reportedly, he attempted to find the inventor of the brake and have him charged in a military court (Kekkonen; no date). Lahti felt that the brake decreased the KP/-31's muzzle velocity, thus affecting range and stopping power, and that it decreased reliability in cold weather. In the bitter cold of the Finnish winter, gunshot residue in the muzzle brake might mix with condensation, creating a gummy mixture that could cause the bolt to seize in the receiver tube. Some accidental discharges resulted from this condition when weapons in which the bolt had seized thawed, allowing the bolt to suddenly go forward, firing the SMG if a loaded magazine was in place (Heidler 2015: 16).

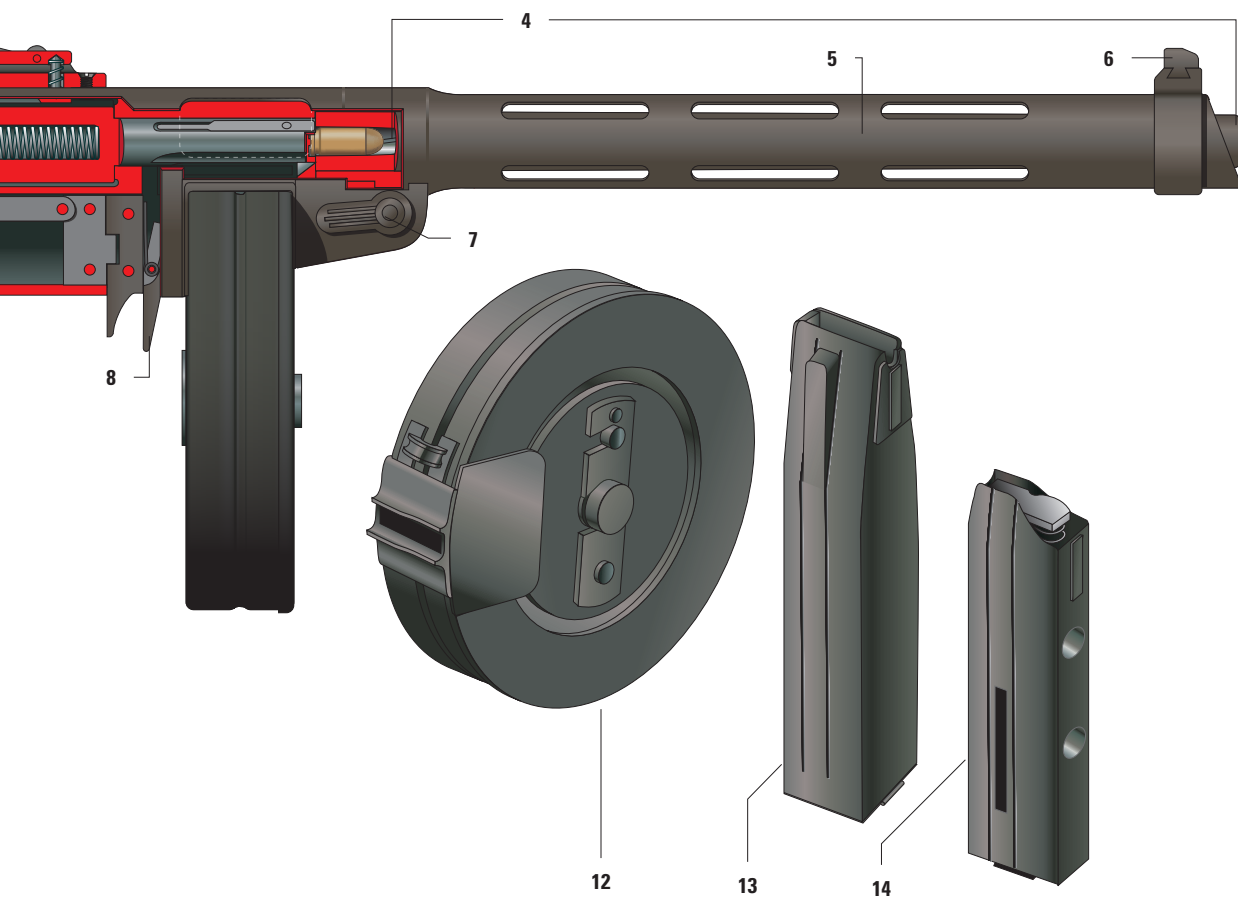


The KP/-31 barrel and muzzle shroud; in this case the SJR version with the muzzle brake. (Author)

THE SUOMI EXPOSED

9×19mm KP/-31





1. Stock
2. Receiver end cap
3. Cocking handle
4. Barrel
5. Barrel shroud
6. Front sight
7. Barrel removal lever

8. Magazine release
9. Safety/selector
10. Trigger
11. Cocking lever spring
12. 70-round drum magazine
13. 50-round box magazine
14. 20-round box magazine

15. Recoil spring
16. Rear sight
17. Bolt
18. Extractor
19. Firing pin
20. Chamber
21. Sear

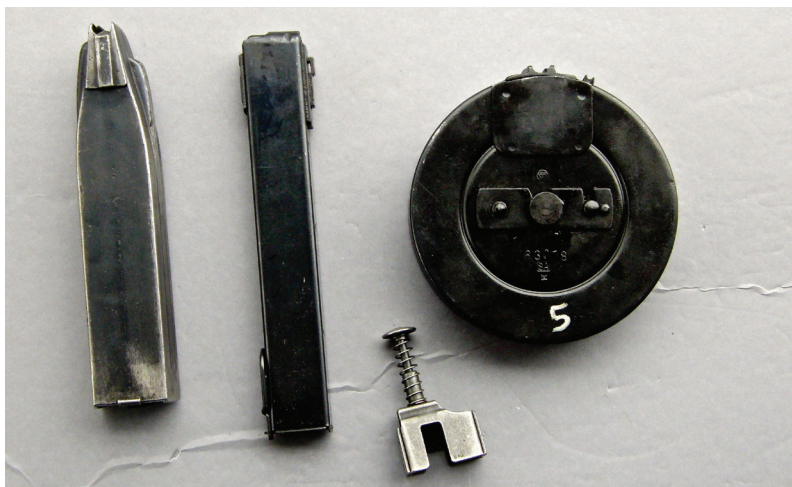


The KP/-31 SJR version of the Suomi incorporated a muzzle brake for the Finnish Army. Aimo Lahti disapproved of the use of the muzzle brake in the strongest terms. (© Royal Armouries PR.7657)

SUOMI MAGAZINES

The 70-round drum magazine was just one of the magazines developed for the KP/-31 during its years of service. This evolution is worthy of examination in some detail; and to understand how magazines work, some history is useful. Detachable magazines evolved from the charger clip, which fed cartridges into a fixed internal magazine. The US citizen James Paris Lee developed the detachable magazine for his Model 1879 rifle, though it is probably best known for use in the M1895 US Navy Lee rifle. Lee's system was also incorporated into the British Lee-Enfield and Lee-Enfield rifles.

Basically, there are three primary types of detachable magazines: box, drum and pannier. The box magazine normally has cartridges placed parallel to the weapon's bore in layers, either single row or double row. Pushing cartridges against a follower under spring tension allows the box magazine to be loaded. As the bolt of the weapon comes forward, it strips cartridges from between the magazine lips into the chamber. For automatic weapons, larger-capacity magazines are needed, which has resulted in many having a curved design. Single-row (single-stack) magazines have one cartridge atop another in a layer. Double-row magazines normally use a staggered-feed system with two rows of cartridges until they reach the feed lips, at which point they feed from alternate sides.



Three principal types of magazine for the KP/-31. Left to right: 50-round 'coffin' magazine, 36-round Swedish M/45 magazine and 71-round drum magazine. Also shown is the magazine loader for the 50-round magazine, without which the magazine was virtually impossible to load. (Author)

Single-row magazines normally proved more reliable in early machine guns, but this type of magazine needed length to have high capacity. In some machine-gun designs, such as the Madsen, a curved top-feed magazine was used, while in others such as the Johnson M1941 LMG, a side-feed magazine was used. As a result, the machine gun could fire from the prone position.

For the MP 18/I SMG, Hugo Schmeisser invented a type of box magazine generally designated staggered-row-single-position feed. Using what came to be called 'Schmeisser's Cone', cartridges rode in the magazine in staggered rows, but were forced into a single row prior to feeding into the chamber. Later, Oscar V. Payne invented a staggered-row, two-position feed magazine that caused two cartridges to converge alternately for smooth feed without need for a feed ramp, for the Thompson SMG.

Of particular significance for the Suomi was the double-compartment magazine, with single feed, developed by the Swedish designer Carl Schildstroem and produced by AB Linde. This system was used in a four-row, single-position feed magazine that held 50 rounds. In effect, this magazine contained two magazines feeding into Schmeisser's Cone for single feed as the cartridges were chambered. This system was used in the Finnish 'coffin' magazine for the Suomi. Tikkakoski Oy purchased the rights to manufacture the 'coffin' magazine in 1940, and between 1941 and 1943 produced 120,000 of them. Magazine springs were still purchased from Sweden, however (Kekkonen; no date).

Though this magazine was widely used in KP/-31 SMGs during the Winter War and Continuation War, Finnish troops found it heavy (0.91kg empty), complicated and unreliable. It was also very difficult to load fully, even with the special loading tool. Some claimed that without the tool, it was difficult to load more than ten rounds. (The author has, indeed, found the tool a necessity in loading 'coffin' magazines.) Finnish troops often loaded fewer than 50 rounds – sometimes as few as 25 – for reliability. Still, the 50-round magazine was lighter than the 71-

A close-up showing the process of using the loading tool to fill a 50-round 'coffin' magazine. (Author)



round drum magazine, and its tapered springs allowed compression into a small space, keeping the overall length of the magazine only slightly longer than that of the 20-round box magazine. According to Pertti Kekkonen, the ‘coffin’ magazine was also too fragile, easily dented and quickly rendered unreliable if dust or dirt got inside (Kekkonen; no date). Given the operating conditions in Finnish forests, keeping debris out of the magazine could be problematical.

Another solution to the problem of creating a high-capacity magazine for LMGs and SMGs was the drum magazine, which uses a spring to push cartridges in a helical path around the circular shape of the drum to feed one-by-one through the magazine lips. One of the best-known was the ‘Snail Drum’ developed for the German Artillery Luger and also used in the Bergmann MP 18/I. More influential for the development of the Suomi drum magazine were the 50- and 100-round examples developed for the Thompson SMG by Oscar V. Payne. These used a star-shaped cartridge pan combined with a multiple-arm follower moved by a clockwork spring. Consecutive cartridges were then fed into the lips of the magazine, which were cut into the drum’s side.

The drum magazine used in the Suomi was designed by Oskar Alfred Ostmann of Tikkakoski Oy – but it should be noted that at least one source attributes the design of the 70-round magazine to Lieutenant Y. Koskinen, who developed it after the dissolution of Konepistooli Oy (Kekkonen; no date). Less complicated than the Thompson drum, Ostmann’s design had a single follower driven by a strong clockwork spring. This spring is often compared to that used on early Victor phonographs. A very strong spring was necessary to overcome the inertia of 70 rounds carried in the drum. When loading the 70-round drum, it is necessary to rotate the spring almost two full rotations clockwise. Cartridges are loaded standing on their bases – 35 into the inner groove fastened to a rotating feed plate and 35 into the outer feed groove. Cartridges feed first from the outer groove, then, when it is empty, they feed from the inner groove. Initially, the Finnish Ordnance Department



A large number of spare KP/-31 drum magazines, along with various tools. (SA-kuva)



Various Finnish weapons and equipment laid out, including two KP/-31 SMGs, drum magazines (one of which is open to show cartridges), captured Soviet RG-33 stick grenades, a captured Tokarev TT-30 pistol and a *puukko* knife. (SA-kuva)

ordered from Tikkakoski Oy 8,000 70-round drums on 28 January 1936, followed by orders for another 20,000 in April 1936 and 21,000 in January 1937 (Kekkonen; no date).

This magazine proved susceptible to dirt, but it served the Finns well during a crucial period: 1936–44. It was also copied by the Soviets for use in the PPSH-41 SMG. As a result of its use by the Soviets, and later the Chinese, as well as the Finns, this became one of the most widely distributed magazine designs of all time.

The pannier (disc) magazine, which places cartridges flat on their side, with the bullets facing the centre of the circular magazine, parallel to the bore was designed to feed from the top in its best-known usage, in the Soviet DP-28 and Lewis Gun. Its only applicability to the Finns is that they used the magazines in their captured DP-28 LMGs (Erenfeicht; no date).

The early Suomi magazines did not have the staying power of those discussed above. Initially, a 20-round magazine was developed; actually, it held 25 rounds, but was not reliable when fully loaded. A partially loaded magazine created a problem, however, if it were dropped, as a cartridge could rotate due to jarring so that the bullet ended up facing the rear of the magazine (Kekkonen; no date). These magazines had the advantage of being handy and light – only 0.44kg fully loaded. The 20/25-round box magazine was slow to load so production ceased prior to the Winter War. Once the war started, however, production resumed but was stopped again after the conflict ended.

A 40-round drum was also used with early versions of the Suomi, but it proved unreliable and very difficult to load. If extreme care were not taken when loading, a cartridge could fall on its side, jamming the magazine and requiring all of the cartridges to be removed and the reloading process to start again. Although it proved virtually useless in the

field, this magazine had a small round peephole through the bottom, and the magazine feed plate was marked '1' to '40', theoretically to allow the shooter to determine how many rounds had been fired. The 40-round magazine was nicknamed *sissilipas*, or 'ranger magazine' (Kekkonen; no date). Not only was the later 70-round magazine more reliable than the 40-round version, but it weighed the same fully loaded – 1.48kg – as the latter.

Lahti also designed a 60-round drum using a sprocket-wheel mechanism similar to that used on Thompson SMG drums (Kekkonen; no date). This magazine was easier to load and was reliable, but it was not adopted. Presumably, Finnish production capacity was better served by continuing to produce designs for which tooling was already available.

The number of magazines normally issued with the KP/-31 varied during the Winter War, but by 1943 was mostly standardized at either five 70-round drum magazines or seven 50-round box magazines (Jaeger Platoon 2013).

Later, 36-round Finnish Lapua-produced magazines for the Swedish Carl Gustav m/45 SMG were also used in the KP/-31, as well as the Finnish KP m/44, which will be discussed later. The Carl Gustav magazine was adopted by the Finns on 21 December 1954, hence its designation as magazine M/54. Initially, 50,000 of these magazines were ordered from AB Linde. On 5 March 1955, the Finnish Army General Staff ordered another 200,000 of the magazines from Lapua (Kekkonen; no date). Lapua is, of course, best known today for the .338 Lapua Magnum sniping-rifle cartridge.

As a note on use of the different magazines, the 'coffin' magazine and the later stick magazine could normally be inserted into the Suomi with the bolt closed, allowing the gun to be carried without a round in the chamber but with a magazine in place. At least one Finnish source states that the drum magazine could not be inserted with the bolt forward; however, based on the author's experience with the Swedish kpist m/37-39, the drum may indeed be inserted with the bolt forward without any problem.

SUOMI VARIANTS

The Korsu-Suomi

Among the specialized versions of the Suomi produced was what is normally termed the 'Korsu-Suomi' (bunker version). As the Mannerheim Line was being prepared to repel a Soviet attack, it became apparent that a version of the Suomi that could fire through vision slits, firing ports or observation cupolas was desirable – but the barrel jacket of the KP/-31 did not fit through slits and the wooden stock was too cumbersome within the confines of a bunker. As a result, a version was produced with a longer, narrower barrel jacket, a pistol grip and sights moved to the left side of the SMG. The longer barrel jacket was designed to expel gases

Finnish 9×19mm ammunition for the Suomi

When the Finns declared their independence from Russia in December 1917, they found themselves equipped with various types of rifles, including the 7.62×54mmR Mosin-Nagant M1891, the Japanese 6.5×50mm Arisaka Model 30, Model 35 and Model 38 and the Russian 10.67×58mmR Berdan II. Within ten years, the Finns had standardized on the Mosin-Nagant rifle. For ammunition, they relied on 111.6 million rounds of 7.62×54mmR captured from the Russians plus 41.5 million rounds acquired from Germany. It quickly became apparent to the Finns that they needed their own ammunition factory, so, as a private enterprise, Suomen Ampumatarvetehdas (SAT), was established in Riihimäki. When the factory opened in 1920, it reloaded fired cases, as it did not yet have the capability to produce brass cases. The quality of the ammunition was below par and did not meet Finnish Ministry of Defence standards. Despite the fact that SAT began producing its own bullets and brass cases, the ammunition was still of an unacceptable standard and the factory was closed in 1922 (Finnish Military Guns; no date).

Still in need of a domestic source of ammunition, the Finnish government established the Valtion patruunatehdas (VPT) ammunition factory in Lapua during 1923. The ammunition produced by VPT was of a high standard, especially the Match ammunition produced for the Civil Guard. VPT also produced export ammunition for Estonia and Latvia. As the Winter War approached, VPT established facilities to produce rifle bullets at various locations.

While VPT was producing ammunition for Finnish military rifles and machine guns, Oy SAKO AB (Suojeluskuntain Ase-ja Konepaja Oskeyhtio) was established to produce boat-tail rifle bullets and eventually to load rifle cartridges. SAKO also began producing 9×19mm and 7.65×19mm pistol cartridges. Additionally, SAKO reloaded fired rifle brass of much higher quality than that from SAT (Finnish Military Guns; no date).

Another key component in producing ammunition is powder. In 1926, the Finnish Ministry of Defence established a powder mill at Jyväskylä near Vihtavuori. Normally referred to as VRT, from 1934 to 1939 the powder mill also produced mercuric primers, and in 1939 also started producing Sinoxid non-mercuric primers (Finnish Military Guns; no date). This change would have been a boon, as mercuric primers when used with smokeless powder could cause deterioration of the brass – a disadvantage given that the Finns were reloading used brass cases.

At the start of the Winter War, VPT was producing 10 million cartridges per month, while SAKO and some smaller temporary facilities were producing a total of 1.8 million cartridges per month. Finland also placed very substantial ammunition orders with other countries, some for weapons in non-Finnish standard calibres acquired from other countries. During the Continuation War, when

Finland once again needed large quantities of ammunition, the Finns produced a total of 293 million rifle cartridges and 322 million pistol cartridges. From the Russians, the Finns captured 39.6 million 7.62×54mmR rifle cartridges and 2.3 million pistol cartridges, presumably 7.62×25mm Tokarev but also likely to have included some 7.62×38mmR Nagant revolver rounds. From the Germans the Finns acquired: 82.1 million captured Russian 7.62×54mmR rifle cartridges, 18.2 million 9×19mm pistol cartridges and 11.8 million 7.92×57mm Mauser rifle cartridges (Finnish Military Guns; no date).

Originally, the 9×19mm Parabellum round as loaded in Germany for the Luger pistol used an 8g (123.5-grain) bullet. The 7.5g (115.7-grain) bullet loading reportedly was developed in Finland specifically for the Suomi SMG (International Ammunition Association; no date). Speculation is that the Finns wanted the lighter bullet to offer a flatter trajectory and greater range since they used the Suomi at longer ranges than was typical for SMGs. It is sometimes stated that the 7.5g bullet originated in the United States, but this probably results from the Finnish contract with Winchester during the Winter War for 9×19mm cartridges using this bullet. The Finns had actually sent two KP/-31 SMGs and some Finnish ammunition to Winchester for quality-control purposes. However, this ammunition does not appear to have been delivered to the Finns but instead to have been purchased by the British. The same source also notes that Winchester loaded some 7.5g bullet loads designed for the Suomi for sale to participants in the Chaco War as early as 1935 (International Ammunition Association; no date).



Two boxes of 9×19mm ammunition of the type used by the Finns in the Lahti L-35 pistol or Suomi SMG. *Elohoepa nalli* translates as 'mercury detonator', indicating that a corrosive mercury primer was used. As Sinoxid non-mercuric primers were produced after 1939, it may be surmised that this ammunition was produced prior to that date. (Thompson Knox collection)



The 'Bunker Suomi' was developed to allow Finnish soldiers to engage the enemy through the vision slits in the steel cupolas of bunkers. Once the Winter War began, manufacturing resources were devoted to producing KP/-31 SMGs for combat usage so only a small number of prototype Korsu-Suomi SMGs were ever produced. Primary features of the Korsu-Suomi were a slimmer, longer barrel shroud without a front sight that could be used through a vision slit, and a pistol grip for use within the confines of the bunker. During the Continuation War, 500 Korsu-Suomi SMGs were produced, with some remaining in the armouries of Finnish fortification troops into the 1970s. In some cases, as in this illustration, the pistol grip was used with a weapon having the standard barrel and shroud. (© Royal Armouries PR.7659)

outside the bunker so that they did not accumulate inside. After testing prototypes, the Korsu-Suomi was adopted in September 1939 (Heidler 2015: 17).

Before the Korsu-Suomi went into full production, the Soviets invaded Finland and resources were devoted to producing standard Suomi SMGs. The Korsu-Suomi prototypes that had been built were reportedly issued to troops serving in bunkers, while the longer barrel jackets that had been produced were fitted to standard Suomi SMGs and used to fire through vision slits. The concept of the Korsu-Suomi was not dropped, however, and during the Continuation War improvements were made to the design, with 500 of the bunker SMGs being ordered in January 1941. Early prototypes had a 38.5cm barrel, while those produced for the 1941 order had a 43.5cm barrel. It was found that the 43.5cm barrel was better for reducing muzzle flash and expelling gases outside the bunker. The actions of standard KP/-31 SMGs were used with the Korsu-Suomi SMGs. After

During September 1941, a Finnish soldier searches a captured Soviet bunker for remaining soldiers; note that he uses a KP/-31 fitted with the special barrel jacket of the Korsu-Suomi bunker version. (SA-kuva)



the end of World War II, some Korsu-Suomi SMGs were retained in the armouries of fortifications that remained in Finland until the 1970s, when some went to museums, while others were converted to standard KP/-31 configuration (Heidler 2015: 18).

The tank version

Finland acquired its first tanks from France just after World War I. These comprised 32 FT-17 models, 14 of which were armed with the 37mm Puteaux gun and the reminder with machine guns only. When the Winter War started in late 1939, the Finns had only a limited number of tanks available to combat the massive Soviet tank forces. Two of the four tank companies in the Finnish Tank Battalion were still equipped with FT-17s, but these were incapable of standing against Soviet armour. As a consequence, most or all of the FT-17s were dug in and used as static defensive pillboxes.

To upgrade their tank force, the Finns tested four different Vickers tanks during the 1930s, including the Mk E, Mk VI B, Vickers-Carden Loyd Light Tank M1933 and Vickers-Carden Loyd Light Amphibious Tank M1931. The Finns chose to order 32 of the 6-ton Mk E tanks in 1936, but to save money they ordered them without armament. The intention was to equip them with 37mm guns, but only tanks for one company had been fully equipped with weaponry by February 1940, by which time the Winter War was almost over. Finnish tanks only engaged in one battle against Soviet tanks. In an attempt to counter a Soviet offensive near Lake Nääkkijärvi, a Finnish tank company with 15 Vickers Mk E models was thrown in against Red Army T-28 tanks. In the battle, the Finns lost four tanks and the Russians eight.

After the Winter War, the Finns enhanced their tank forces by upgrading the Vickers' 37mm guns with captured Russian 45mm guns. The Vickers' thus equipped were designated T-26E ('E' for English). The Finns also used captured Soviet T-26A tanks. Versions without the 45mm gun were usually converted to take the 45mm gun as well. Normally, the converted tanks also took the DP-28 LMG (designated 'DT' by the Finns). During the Continuation War various other Soviet tanks were captured, many of which were taken into the Finnish armoured forces (Marttila 2014).

The Finns wanted to supplement the 45mm guns and DP-28 LMGs mounted in their T-26E tanks with the Suomi SMG. Not only was the intent to allow tankers access to the KP/-31 for use when dismounted, but arrangements were also made to fire it from a firing port in the front hull. A special barrel jacket, which was attached permanently to the firing port and which had a pistol grip, was designed for use through the firing port. The tank version of the KP/-31 was designed so that it could be removed from the firing port for emergency close-combat use by the tank crew. Reportedly, only about 40 tank Suomi SMGs were produced, for use in the 24 T-26Es. In use, the tank version of the Suomi proved redundant, as the DP-28 LMG mounted in the T-26E proved more effective for engaging infantry (Jaeger Platoon 2013).

The flamethrower version

An interesting variation of the KP/-31 was produced primarily for use by Finnish combat engineers. This version incorporated an underbarrel flamethrower with a hose attached to a fuel tank on the operator's back. Designed by Sergeant M. Kuusinen of Infantry Regiment 1 in the spring of 1944, it is speculated that 100 or fewer flamethrower KP/-31s were ever ordered, with possibly as few as 40 units having been produced. Reportedly, though, two examples did see combat in the spring of 1944, one of which was used at Loimola by Combat Engineer Battalion 35 to destroy a fortified enemy emplacement. Some 160 Soviets were killed in the fighting with the loss of only four Finns killed and 35 wounded. Every member of the flamethrower squad was decorated for valour. What is especially interesting is that it is also reported that, although most of the devices were destroyed after the war, a few remained in use with engineers of the Finnish Border Guards until the 1970s (Forgotten Weapons; no date).

The suppressed Suomi

Perhaps for the Finnish *Sissi* (Rangers) or perhaps as an experiment in firearms development, a suppressed version of the Suomi was developed in the 1990s using leftover parts from original Suomi production. Known as the *Suhini-Suomi* (Sighing Suomi), this version was created from semi-finished forgings of barrel jackets that had not been perforated. Barrels were shortened and holes were drilled through the barrels in similar fashion to those of the Sten Mk IIS. These holes allowed bleed-off gases and lower pressure so that the bullet left the barrel at subsonic speed. The barrel jacket of the 'SS-II' Suomi acts as the outer casing for the suppressor. The suppressor functions in the following manner:

The unit is of a telescopic construction. Twenty cupped baffles, similar to those of famous Maxim Silencer, are stacked into the front end of inner suppressor sleeve. This sleeve is fastened by a threaded cap into the jacket and is removable as one part.

The barrel is centered into the sleeve by a perforated support and a solid septum. A snugly fitting shoulder in front of the barrel flange centers it into the jacket. Powder gas, bled from barrel perforations, fills the space between the sealing shoulder and the septum known as the 'blowback intensifier chamber'. The bullet, emerging from the muzzle, flies through the stack of baffles. The muzzle blast hits the conical diffractor and the curved reflector, refluxing to an expansion chamber around the barrel.

When the bullet emerges from the mouth of the suppressor, powder gas is trapped in the expansion chamber

and into the spaces between the baffles. This part of the gas flows slowly out of the suppressor mouth with a muffled 'sigh'. Another volume of gas, trapped into the blowback intensifier chamber, escapes into the bore through barrel perforations. The rapid reflux of the gas accelerates the rearwards movement of the breech-bolt.

The component parts of the Barrel Unit are enclosed in the jacket which may be mounted onto any KP/-31. The use of a slightly shortened recoil spring may be necessary in order to avoid uncontrolled fire when shooting the least powerful factory-loaded cartridges or subsonic handloads made for guns with a traditional muzzle-can suppressor. The mechanical noise of a suppressed KP/-31 is conspicuously low due to the heavy steel construction of the receiver and the noise-absorbing, wooden stock. (Kekkonen; no date)

Kekkonen goes on:

The original 'Barrel Unit SS' was designed in the early Nineties by Mr. Juha Hartikka of BR-Tuote, Joensuu, Finland (a famous manufacturer of suppressors and other equipment related to firearms). A drawing of an improved Unit SS-II is dated September 15, 1995, five years after the design of the original B.U.S.S.-I. Although the Suomi KP/-31 has officially been declared 'ancient' and 'obsolete', if not yet a 'curio', its development seems to be continuing. (Kekkonen; no date)



USE

The Suomi goes to war

FIELDING THE SUOMI

Issuance

When the KP/-31 was introduced in the early 1930s, a Finnish rifle platoon consisted of two rifle squads and two LMG squads. Each rifle squad was issued one Suomi to give more close-range firepower to the unit. The LMG squads were intended to provide the base of fire for advancing infantry. Although it was originally seen as an LMG, the role of the Suomi evolved to serve as an individual weapon issued to soldiers who could effectively use its firepower during the assault or ambushes. These same soldiers could also make good use of the Suomi's long-range accuracy as well as its firepower.

By the summer of 1940, combat experience had shown the value of the KP/-31, and each rifle squad was equipped with both an LMG and a Suomi, the latter for close-range firepower. It was not until the autumn of 1942, however, that there were enough Suomi SMGs to fully equip every infantry squad. As the Suomi had proven so effective, it was then determined that an infantry squad would be even more effective if equipped with two KP/-31 SMGs. By the end of 1943, the new standard of two SMGs per infantry squad had been met. In an attempt to increase the firepower of the infantry squad even further, it was decided to add a third Suomi

A Finnish LMG operator behind his 7.62×54mmR Degtyaryov DP-28 LMG; his KP/-31 remains close at hand. (SA-kuva)



to each, but before enough had been produced the Continuation War ended. By early June 1944, the Finnish armed forces had received over 52,600 Suomi SMGs.

Caring for the Suomi

The Suomi was designed to continue operating in the harsh Arctic conditions encountered in Finland, but the mud and snow dictated that maintenance had to be carried out readily in combat. Stripping the Suomi for maintenance is relatively straightforward, but the possibility of losing parts means that care must be taken when doing so. A useful trick if the user attempts to cock the Suomi with the safety on, thus causing a jam, is to unscrew the trigger assembly and lift it out of its housing, which will allow the bolt to move forward.

Once the magazine has been removed and the Suomi cleared, the receiver end cap may be removed. This cap is under spring pressure so care must be taken that it does not spring out, possibly causing injury or getting lost. Prior to unscrewing the cap, the cocking handle has to be pulled back about 4cm. Then, the cap should be turned anticlockwise 7–8 turns until it is free of the receiver, at which point the cap and spring may be removed. Once they are removed, the receiver may be tilted upwards to allow the two pieces of the bolt group to slide free.

Next, the barrel and shroud may be removed. The shroud locking-lever should be rotated anticlockwise so that the shroud may be rotated clockwise. As the shroud is rotated it may be pulled away from the receiver. Once aligned, the barrel and shroud may be separated from the



A cleaning kit for the Suomi SMG.
(Thompson Knox collection)



A field armorer works on a KP/-31. (SA-kuva)

receiver. At this point basic field maintenance may be carried out, but if desired the trigger housing may also be removed by pulling the trigger to disengage the striker and removing the screw behind the trigger guard to lift out the trigger housing.

Reassembly is the opposite of takedown. Care must be taken when reattaching the barrel and shroud that the shroud is correctly inserted into the locking lugs. When reinserting the two-piece bolt group into the receiver, the user has to be sure they are correctly assembled. Before inserting the spring and pushing forward the end cap, the cocking handle must be pulled back to align the slot in the cap with the extruded portion of the cocking handle. Using the palm of the hand to hold the cocking handle in place, the end cap may be pushed in and properly aligned with

At left, the oiler used for maintaining the Suomi and at right, the 50-round magazine loading tool. (Author)



the threads on the receiver. Once this is done it should be screwed in until it starts to tighten. At the point where it can no longer be tightened, the end cap should be backed off to be sure the end cap slot is properly aligned.

With reassembly complete, and without a magazine in place, the bolt should be cocked and the trigger pulled to make sure the action is operating properly (an audible click should be heard). The safety should also be checked for proper operation.

Most sources state that the Suomi was supplied with two barrels, both regulated to the weapon. The author found one source that actually stated that Suomi SMGs were supplied with four barrels – two for live fire and two for training with dummy rounds – but he has not found this confirmed anywhere else and doubts this assertion since there would seem to be little need for barrels especially designed to use dummy rounds unless they were specifically designed with chambers that would not chamber live rounds to prevent training accidents. Even so, why would two barrels for dummy rounds be necessary?

Contrary to the training most military personnel have received, Finnish troops were instructed that a bullet stuck in the barrel could be removed by firing a full-power cartridge!

If the jacket and barrel are hot after shooting it is advisable to protect the hand. A thin handkerchief is insufficient for this purpose after a discharge of twenty shots on automatic. A bullet of faulty cartridge stuck in the bore was the usual reason for barrel replacement during battle. According to the booklet 'SUOMI-KONEPISTOOLI', published in 1942 by O/Y TIKKAKOSKI AB, it was allowed and safe to remove a stuck bullet by shooting with a full-powered cartridge. This harsh method was, of course, 'for extreme urgency only'. The primer of cartridge usually exploded during shooting away the stuck bullet, and the extractor disappeared after 'duplex ball' shot, but the KP/-31 works well with no extractor at all. The thick-walled barrel easily withstood this misuse but it was necessary to remove the magazine and push the cartridge manually into the chamber.

In combat it was not unusual to shoot barrel and even the jacket of KP/-31 literally red-hot. If cleaning-rod was not at hand it was possible to turn the jacket loose with the edge of a puukko-knife and



knock the barrel out with the point of puukko. Every Finnish fighter had (and still has) a knife with sheath as a multi-purpose tool, always hanging on his or her belt. (Kekkonen; no date)

A Finnish soldier takes time while away from the front line to clean his KP/-31. (SA-kuva)

The author would certainly not recommend firing any weapon to clear a bullet stuck in the barrel. Unless engaged in a heavy firefight, a far more sensible solution would have been to remove the barrel and replace it with the spare accompanying most Suomi SMGs. The barrel and jacket would

Lieutenant Olavi Eelis Alakulppi, who was awarded the Mannerheim Cross, instructs Finnish recruits in using the KP/-31 SJR. (SA-kuva)



often become red hot after extensive firing, however, in which case a cleaning rod or a *puukko* knife would be used to remove the barrel.

Evolving doctrine

Before looking at examples of actual use of the Suomi in combat, it is enlightening to look at Finnish training and doctrine in the use of the SMG. According to Kekkonen, during the 1930s, semi-automatic rather than full-automatic shooting was stressed with the KP/-31. The weapon was used as a self-loading carbine, with bursts only to be fired when heavily engaged. This was in part because the Finns were well trained to use their sights, and during full-automatic fire, smoke obscured the target and recoil pulled the sights off the target.

Combat in the Winter War, however, would teach the Finns that bursts of 2–3 rounds were needed to stop a Soviet attacker. Even so, with full-jacketed 9×19mm ammunition, a short burst might only wound the enemy, who could continue fighting after recovering from the initial shock of being shot. Even if their wounds might prove fatal eventually, that did not prevent Soviet troops from killing or wounding Finns even after being hit (Kekkonen; no date). Although Kekkonen does not mention the cold factor, the rapid coagulation of blood that would stop a wounded Soviet soldier from bleeding out might have contributed to his ability to keep fighting.

Although normally the Suomi would have been used on semi-automatic for longer-range ‘sniping’ or hunting small game, firing from the shoulder and using the sights, Kekkonen states that SMG-armed Finnish troops in combat often fired from the hip with the weapon tightened against the sling.



Suomi operating sequence

First, the magazine should be inserted into the magazine well by thrusting it straight upwards (1). The box magazine and drum magazines may be inserted with the bolt forward, which allows the SMG to be carried safely with an empty chamber and the safety on. In this case, the shooter would flip the safety to semi-automatic or full-automatic, then cock the bolt. Alternatively, the magazine may be inserted after the bolt is cocked in step two and the safety is applied.

After taking the firing selector off the 'safe' position and pushing it either halfway forward for semi-automatic or all the way forward for full-automatic, the cocking handle must be pulled to the rear to cock the bolt (2). Note that the safety when on locks the bolt forward to prevent it jarring back and inadvertently going onto full-automatic. With the bolt cocked, the safety may be pushed all the way to the rear, after which a magazine may be inserted (if a drum magazine or a box magazine had not already been inserted) with the bolt forward (3).

When ready to fire, the safety may be pushed to the semi- or full-automatic position (4). A pull of the trigger will fire single shots

or multiple shots depending on the selector setting (5). The Suomi is relatively easy to control for short bursts of 3–5 rounds. Its weight is such that there is less muzzle climb than with some other SMGs, but the shooter will still need to grasp it tightly and lean into it to control it. Note that the support hand may be placed on the wooden forearm or the front of the magazine housing. The author finds that placing the support hand on the wooden forearm is less comfortable than on the front of the magazine well and also allows less control. When using the magazine well as the grasping point, however, care must be taken not to let the hand stray in front of the muzzle or to drop and grasp the magazine, which may affect reliability of feeding. Although some Finns reportedly used the KP/-31 in the assault position, firing from the hip while the SMG was slung, the author prefers to fire from the shoulder for better control and accuracy.

When the magazine is empty, the magazine release is depressed with the thumb of the support hand and the magazine is pulled free (6). It may then be replaced with a full magazine, once again preparing the Suomi to fire.

THE SUOMI IN COMBAT

An appealing feature of the Suomi compared to many other SMGs was its accuracy and its effectiveness at longer ranges. Much of this accuracy could be attributed to its lighter recoil – at least partially due to its weight – and its good sights. The rear sight was fully adjustable, with settings to 500m, while the front sight was drift adjustable. As these sights had some similarity to the sights on Finnish Mosin-Nagant rifles, they would have been easier for Finnish troops to use. Some features of the Suomi resulted from the intent to use it in place of an LMG in infantry units. Its 70-round drum magazine allowed sustained fire, while its barrel and barrel shroud were quickly detachable using a latch. A second barrel regulated to the individual weapon was supplied with each KP/-31. The ‘sighting in’ stamp on the rear flange of the barrel indicated whether the second barrel or a replacement barrel matched that of the original barrel. If these ‘sighting in’ markings matched, the barrel was guaranteed to shoot a ten-shot group at 100m within 25mm of the point of aim without changing the sights (Kekkonen; no date).

When the Suomi was used as an LMG, a second soldier acted as a loader to supply the operator with magazines (Heidler 2015: 15). In combat during the Winter War, the KP/-31 did not prove to be an effective LMG, though it did account for large numbers of dead Soviets when the gunner and loader set two-man ambushes. During the Winter War, the Finns captured so many DP-28 LMGs that the Soviet weapon replaced the Suomi in this role and largely supplanted the Lahti-Saloranta m/26, the standard Finnish LMG.

As an aid to understanding deployment of the Suomi in combat, it is important to understand Finnish use of the *motti*. This term derives from the Finnish for a cubic metre of cut timber, and was used by the Finns to describe a tactical envelopment of Soviet troops. It implied that the Soviet troops were firewood waiting to be ‘burned’. Simply put, the tactic involved surrounding Soviet troops, eliminating various elements until the remainder were isolated. These pockets of troops suffered from cold, lack of sleep and constant pinprick attacks by Finnish ski troops. The Soviet troops’ reliance on their vehicles made it even more difficult for them to break free of the attacks by the Finns, who would use Suomi SMGs, grenades and Molotov cocktails to sow destruction as they quickly skied away; sometimes, to instill more fear in the Soviet soldiers, Finnish soldiers would infiltrate the Soviet lines and slit troops’ throats with their *puukko* knives (Jowett & Snodgrass 2006: 43–44).

It is worth noting that had the Finns possessed more artillery, they could have inflicted even heavier casualties on Soviet troops encircled using the *motti* tactics. Although effective, the hit-and-run tactics did not inflict maximum casualties.

In some cases, Soviet troops tenaciously dug in when surrounded and fought hard for days or longer. The presence of tanks and artillery in some *motti* encirclements made them difficult to destroy. Wearing down the Soviet forces trapped in the *motti* with constant night-time raids deprived them of sleep, eliminated troops and sapped their will to fight. By using hit-and-run tactics, in some of the larger *motti* encirclements hundreds of



Finnish troops giving covering fire to others attacking across a frozen lake; the man in the foreground presses his finger against his KP/-31 SMG's end cap to reduce recoil and allow more accurate fire. (SA-kuva)

Soviet troops were killed for the loss of a handful of Finns. Soviet troops who managed to break out of a *motti* encirclement were often butchered piecemeal as they attempted to reach their own lines.

The Finns were also quite clever in their use of the cold weather and booby traps, as reported by Harold Denny of *The New York Times*:

When the Russians were advancing in the Petsamo region almost unopposed in the early days of the war the Finnish patrol destroyed every building in Petsamo's main settlement except the Finnish bath and prepared with fiendish ingenuity to receive the Russians.

The first Russian soldiers arriving took refuge from the cold in the bath. In one corner was a well. A Russian soldier seized the rope and began hauling up a bucket of water. It was a booby trap. The well exploded, killing several Russian soldiers. But it was bitterly cold and after the excitement from this disaster had died down, a Russian pulled out the damper of the stove preparatory to lighting a fire. That set off another explosion which killed more Russians. The remainder rushed out and threw themselves into a near-by depression. That also was mined and all but two or three were killed. The survivors rushed blindly toward the bordering forest and as they reached it struck Finn wire which set off another mine and killed them. (Quoted in Sander 2013: 84)

During this incident, the Finns were hidden nearby watching the results of their booby traps. No doubt they had their Suomi SMGs ready to deal with any survivors.

To a large extent, Soviet tactics also created opportunities for the Finns. As Kyle Vautrinot points out:

Soviet infantry were armed primarily with bolt-action Mosin-Nagant rifles, as was the standard practice of the time, but new semi-automatic weapons were introduced in the form of the SVT-38, which proved itself to be of weak construction and too mechanically complicated for the Soviet conscripts. The Finns, however, were armed with their

version of the Mosin-Nagant, the Suomi submachine gun, and, when they were available, the Lahti M26 light machinegun, which proved to be a fearsome weapon. At the same time, there was little winter camouflage or clothing for Soviet troops, a major limiting factor for their effectiveness. Morale soon began to plummet, which contributed to the view in the West of the Soviet soldier being poorly motivated and even more poorly led. Part of this is because of the lack of initiative that Russian officers had, along with ineffective preparation for cold-weather combat. (Vautrinot 2013)

By early 1940, the Soviets had adjusted the training for troops and lower-level officers to enable them to counter Finnish tactics more effectively. The lack of Soviet SMGs capable of countering the Finns' close-range firepower advantages granted by the Suomi was also addressed with the PPD-40 and PPSH-41. By April 1941, the typical Soviet infantry company had 126 rifles (some of these the semi-automatic SVT-40), 64 SMGs (probably still the PPD-40 at this point), 12 LMGs, two medium machine guns and one 50mm mortar (Vautrinot 2013).

One specific tactic for use of the Suomi against concentrations of Soviet troops employed a loader to keep feeding the SMG operator with replacement magazines:

Sometimes a single Finnish submachine gunner against a hundred Russians. At other times one gunner and a couple of magazine-filling assistants struggled against a full infantry company – 200 Russians – killing almost half of their troop and wounding many others. Some Finnish writers of war and remembrance novels say they have given too small numbers of Killed In Action enemy soldiers in their books because 'nobody can believe my eye-witness' claim that one submachine gunner can slaughter eighty-five enemy soldiers during a skirmish lasting less than thirty minutes'...! Harsh facts are sometimes more incredible than fictions of novel writers. (Kekkonen; no date)

Kekkonen also discussed the difference between the Finnish experience in the Winter War and that of the Continuation War. Ukrainian troops fighting during the Winter War were much easier to stop than the tough Siberian troops faced by the Finns during the Continuation War. As a result, the Finns always tried to 'kill the Siberians twice or even a third time'; five hits were usually necessary and some kept fighting even after absorbing 10–12 9mm bullets (Kekkonen; no date).

Arto Bendiken offers a different view of the effect of cold weather on wounded Soviet soldiers as he discusses Finnish tactics:

Advancing towards Suomussalmi in early January 1940, the 44th [Rifle Division]'s mechanized infantry units were completely road bound in the deep snow. Resembling a huge snake, their column stretched out for thirty kilometers on the Raate road, a long and narrow logging track with virtually no way other than forwards or backwards, surrounded as it was by deep forest and the occasional

OPPOSITE A Finnish soldier providing security aboard a train in Karelia during August 1941; he is armed with a KP/-31 SMG. (SA-kuva)



Members of a ski patrol; the men on the left and right are armed with KP/-31 SMGs while the man in the middle is armed with a rifle. Note that the Suomi may be slung in front ready for immediate action if an enemy is encountered. (SA-kuva)



lake. Once committed to the road, the Soviet troops were effectively trapped, even if they hadn't yet realized their peril. (Bendiken 2010)

Bendiken continues:

Finnish ski troopers, outnumbered by the advancing enemy but much more mobile in this terrain, were able to swiftly and invisibly move up and down the entire length of the enemy column through the surrounding forest. They felled trees to block the road in front and behind the enemy division, stalling the movement of the column, and then proceeded to relentlessly chop up the Soviet column into ever-smaller segments they called *mottis*; a *motti* being a Finnish measure of stacked-up firewood.

Attacking with light machine guns, mortars, and hand grenades, the ski troopers would surge out of the forest to cut the road at that point, quickly disappearing on the other side of the road. They would be followed by Finnish combat engineers who would widen and fortify the breach, decisively cutting off one piece of the enemy column from the other. Once the Soviet division was split up into these smaller and more manageable pockets of enemy troops, the *mottis* could then be dealt with individually by concentrating forces on all sides against an entrapped unit. Surrounded and pinned down by Finnish snipers, the invaders froze or starved to death if they didn't first succumb to rifle fire and wounds.

The deep cold at Suomussalmi that winter was so intense that almost any wound was fatal, and the instant a man was hit by a bullet and his circulation slowed, his body would freeze in the very posture that he was standing in when he was hit. A macabre legend of the Winter War tells of a surreal scene in still life: a Soviet patrol standing by the side of the road, the men upright and frozen stiff in the snow, a Soviet officer beside them with a loaded pistol in hand; all had had their throats neatly cut, without a single shot fired from the officer's pistol. They never saw the freedom fighters who had snuck up on them to deliver the silent death of the *puukko* – a traditional Finnish hunting knife that emerged as the Finns' close-combat weapon of choice during the Winter War. (Bendiken 2010)

Suomi accessories

Unlike most armies that had specific pouches to carry spare magazines, the Finns normally did not. Generally, both drum and box magazines were carried in knapsacks or backpacks. Sometimes they were attached to the belt by a cord. The eyelet or lanyard ring attached to each magazine allowed attachment to the cords. Note that these rings were also intended to allow quick retrieval of a magazine dropped in the deep snow by pulling on the cord. There was a leather strap that attached to the drum magazine and allowed it to be slung over the shoulder.

An order was placed in the 1941–43 period for 35,000 magazine pouches from Urheilutarpeita, but as these pouches are not normally encountered among surplus Finnish military equipment it is doubtful if any were produced. During the Continuation War, Home Guard personnel were issued with plywood magazine carriers that each held three 50-round 'coffin' magazines. These carriers were not easily carried, but presumably they would have sufficed for the Home Guard personnel who normally occupied static defensive positions (Heidler 2015: 20).

Two types of slings were issued for the Suomi – both of leather. Pre-Winter War slings were of brown leather and similar to the Finnish rifle sling, though longer. During the Winter War and Continuation War, slings were of green leather (Heidler 2015: 20).



This Suomi magazine pouch carries four 'coffin' magazines. (Author)



At left, a KP/-31 SJR barrel and at right a KP/-31 sling. (Author)



In July 1944, a Suomi-armed Finn stops for a smoke; note the extra magazine at his waist, attached with a cord. (SA-kuva)





Ambush on the Raate Road (previous pages)

This illustration depicts an ambush of Soviet troops along the Raate Road in January 1940. During the battle along the Raate Road, the Soviets would suffer 7,000–9,000 killed in action, as well as 1,300 captured. They would also lose much weapons and equipment to the Finns. A Finnish ski patrol armed with the Suomi KP/-31 SMG has descended upon the stopped Soviet column, raking the rifle-armed Soviet troops with a hail of 9mm rounds. Note that some of the Finnish troops have spare drum magazines hung from their belts; the Finns never really developed a standard magazine pouch. The normal Finnish tactic was to empty a drum into the enemy, then quickly ski away before a counter-attack could be mounted. As a result, the Finns remain on their skis, with their ski poles hanging on straps. Note that one Finn fires from the shoulder and others from the hip. The Finns trained to fire from the hip at close range during ambushes.

As this narrative and many other accounts of the Winter War illustrate, although the Suomi was one of the most effective weapons the Finns employed in close combat, grenades and *puukko* knives were employed equally effectively. In an analysis of the fighting at Suomussalmi, Dr Allen Chew emphasizes the importance of the Finns' ability to fight in cold weather and to use the Suomi to best effect:

In contrast, all of the Finns were experienced skiers and thus able to keep the 44th Division under constant surveillance. They also harassed it night and day with hit-and-run attacks on both of its vulnerable flanks, which stretched nearly twenty miles [32km] from the roadblock to the border. Approaching silently on skis and camouflaged in their white snowsuits, the Finnish raiders often achieved complete surprise. When they opened fire from the woods at close range, their Suomi submachine guns (firing seventy rounds per magazine) were especially effective. (Chew 1981: 20–21)

In a footnote Chew also points out that, 'Each Finnish division was authorized 250 of these weapons [the Suomi], ideal for forest fighting which is necessarily at close range. The Russian forces in Finland had nothing similar until February, 1940' (Chew 1981: 21). Another interesting point made by Chew with regard to Finnish tactics is that to maximize their advantage in cold weather, Finnish troops would fire bursts from their Suomi SMGs at Soviet campfires and would destroy Soviet field kitchens (Chew 1981: 30).

The Finns were very successful at using the Suomi as a 'force multiplier'. On the evening of 11 December 1939, troops from the Soviet 718th Rifle Regiment launched an attack on Finnish supply lines. When they overran a Finnish field kitchen where large vats of sausage soup were boiling, the starving Soviet soldiers halted their attack on the Finns and instead turned their attentions to the soup. Finnish Lieutenant-Colonel Aaro Pajari, commanding Infantry Regiment 16, was returning from a meeting with General Paavo Talvela, commander of the corps-sized Group

OPPOSITE Scanning for the enemy at Lake Onega in August 1942, while armed with a KP/-31 SMG slung across the chest. (SA-kuva)



Talvela, when he received news of the Soviet attack. He quickly organized an ad hoc force of cooks, medics and other support troops to mount a counter-attack. Included was a two-man team that wreaked havoc with the Suomi:

Two of Pajari's men formed an efficient hunter-killer team. One man carried a powerful flashlight, while the other took one of the Finnish Army's prized 4,000 Suomi submachine guns, the durable machine gun that was especially effective in close combat. The team prowled the woods, locating isolated groups of Russians or individual stragglers. When the prey was spotted, the light was switched on, and the Russians invariably froze like deer, whence the gunner cut them down with efficient bursts of 9mm slugs. (Sander 2013: 114)

The analogy of 'spotlighting' deer is interesting as it illustrates how Finnish hunters quickly translated their skills at stalking and hunting game to stalking and hunting Soviet soldiers. Firing the Suomi in single shots allowed it to be used for hunting. Often, a spare bolt was carefully fitted and the barrel jacket was tightened to the receiver; a skilled shooter could kill birds or squirrels using headshots to 50m, thus augmenting Finnish rations. These 'accurized' Suomi SMGs were sometimes used to snipe Soviet officers (Kekkonen; no date).

In some hard-fought battles, the Suomi was even used against tanks. During fighting for the village of Summa on 19–22 December 1942, at least 20 Soviet tanks broke through the Finnish lines, but were left on their own when the Finns repelled the Soviet infantry. Gordon F. Sander describes the fighting:

At Summa, where a mixed force of light and heavy tanks was able to power through the Finns' inner perimeter into the village itself, all hell broke loose as the tankers charged through the deserted streets, while the equally crazed defenders leaped on them, firing their Suomi submachine guns into observation ports, forcing open hatches and pitching grenades and lit kerosene bombs into them, while Soviet fighters buzzed by overhead strafing anything in sight (including as often as not, their unfortunate comrades below). (Sander 2013: 148–49)

One of the most famous Finnish soldiers of the Winter War and Continuation War was Lauri Törni, who accrued extensive experience with the Suomi SMG during the conflict. During a feint against Soviet lines near Lake Ladoga, Törni led a patrol armed with Suomi SMGs and 'stack charges' created by wiring explosives around a German-type hand

Finnish Sergeant Karkkainen after marking his first tank kill on 24 June 1944, one of 16 Soviet tanks destroyed that day, using the German-supplied *Panzerfaust* anti-tank weapon. (SA-kuva)



Lauri Törni

Lauri Törni served in Jaeger Battalion 4 during the Winter War. Because of his heroic actions against the Soviets in action near Lake Ladoga, Törni received officer training and was commissioned in the reserves at the end of the conflict. Later, after undergoing training in Austria, during the Continuation War he served in the Waffen-SS where he continued to fight the Soviets. In 1943, he created a unit known as 'Detachment Törni', which operated behind Soviet lines. Törni's unit was so successful that at one point the Soviets placed a large bounty on his head. In July 1944, he was awarded the Mannerheim Cross, Finland's highest military award.

After the peace treaty between Finland and the Soviet Union was signed in September 1944, Törni was discharged from service, but he left Finland for Germany to undergo training in guerrilla

warfare to continue fighting the Soviets. After the surrender of Germany, Törni surrendered to Allied forces and returned to Finland in June 1945. He was sentenced to prison for having fought for the Germans after Finland had signed the peace treaty with the Soviets, but was pardoned by Finnish President Juho Paasikivi.

Törni made it to the United States and in 1954 joined the US Army under the Lodge-Philbin Act, which allowed the recruitment of foreign nationals for the US Armed Forces. As with many other Lodge-Philbin Act recruits, Törni, under the name Larry Thorne, joined the US Special Forces, where his previous military experience was employed as an instructor of skiing, survival, mountaineering and guerrilla warfare. On 18 October 1965, Thorne was killed in a helicopter crash in South Vietnam.



In the centre is Lieutenant Lauri Törni, armed with a Suomi SMG, while the officer at the left of the photo carries a Soviet PPS-43. (SA-kuva)

grenade. These were intended for use against Soviet armour. Törni's patrol encountered some entrenched Soviet troops and a firefight ensued:

Maatta moved silently, but quickly. They still had not seen him. He attached the stack charge on the truck. A sharp click pierced the frozen air as he pulled the trigger mechanism. The Finns weren't the only ones to hear it. A hand grenade flew through the dark, in Maatta's direction. The flash and boom of the explosion alerted Aarnio, following closely above, that the action on the road had begun. Maatta's gun took a grenade fragment, the force banging the Suomi's butt into his back and snapping its strap. In a swift reaction, Maatta swirled to grab the weapon before it hit the ground. Thorne [Törni] had already sent a burst of automatic fire into three foxholes. He lobbed a five-pound [2.27kg] stack charge into the bunker that produced the grenade aimed to Maatta. The other Finns joined Thorne as they threw hand grenades into foxholes while Maatta caught up with them. (Cleverley 2008: 30)

This anecdote illustrates a couple of points about the Suomi. First, it was sturdy enough to survive the impact of a grenade fragment. Second, the raiding party used the Suomi's firepower to good effect in breaking contact with the Soviet troops.

While serving in the Waffen-SS, Törni continued to make use of the Suomi. In December 1941, he once again found himself fighting in the Karelian forests near Lake Ladoga. Armed with a Suomi and four extra drum magazines in his backpack, he and his orderly set out to scout Soviet positions. According to Jukka Tyrkko, an authority on Törni:

After the action on Kruknoja Hill, Thorne [Törni] left alone on a reconnaissance. I had given him a Suomi sub machine gun that I had taken from an enemy, and Thorne made good use of it on that trip. You see, he bumped into a sleeping enemy platoon. Of course he didn't maneuver around it; he decided to destroy it. Our commander told us that he received a call over the radio that told that Thorne had alone wiped out an enemy platoon of 48 men with hand grenades and his submachine gun. (Quoted in Cleverley 2008: 70)

The 'White Death' (opposite)

Simo Häyhä was best known for using a rifle for sniping, but he also accounted for approximately 200 Soviets using the highly accurate Suomi SMG. Although sometimes Häyhä 'hunted' alongside another Finnish soldier, much of the time he operated alone, relying on his stalking skills and choice of hide to allow him to eliminate his target and get away. Often, the Soviet tactic for countering Häyhä was to call in artillery strikes on the area from which he was shooting. As was often the case with snipers, Häyhä preferred to eliminate Soviet officers or snipers. In this case, however, he appears to be eliminating a straggler who is a target of opportunity.





A Finnish sniper paired with a Suomi-armed soldier offering long-range and close-range engagement capability. (SA-kuva)

Other accounts of the same incident varied in details. One stated that 39 Soviet soldiers had been killed. Later, on a citation for valour, it was stated that Törni had eliminated 20 Soviet soldiers. What all the accounts agreed on was that Törni had indeed wiped out an entire Soviet patrol.

As famous as Törni was, he was not the best-known Finnish soldier of the Winter War. That honour belongs to the famous sniper Simo Häyhä, who was credited with over 700 confirmed kills – the figure usually given is 705, cited as the most kills by one individual

in any major war. Most were achieved with his Mosin-Nagant rifle at distances to 400m, normally using open sights; however, Häyhä also killed over 200 enemy with his Suomi KP/-31, generally in situations in which he could get close enough to attack from a hide in the forest (Bendiken 2010).

Whether it was with his rifle or his SMG, Häyhä was very fast with repeat shots. In the book *The Sniper: Simo Häyhä*, Tapio Saarelainen offers an insight into how Häyhä trained for accuracy and speed:

During his service with the Civil Guard, Simo learned the importance of fast reloading. There is a story on how Simo's friends one time gave him a number of rifle cartridges and told him to shoot as many times as possible during one minute of time at a target located one hundred fifty meters away. As time started, Simo began shooting. One minute later, he had fired a total of sixteen shots and put sixteen holes in the target. For a bolt-action rifle, this was an unbelievable accomplishment considering that each cartridge had to be manually fed with a fixed

A Finnish patrol returning from the front lines against the Soviets in October 1941; note the sniper with telescoped rifle, while other patrol members carry KP/-31 SMGs. (SA-kuva)



magazine that only held five cartridges. For those of us who consider ourselves well trained marksmen today, such a feat would be impossible to attain regardless how long we trained in our lifetime. Simo's uncanny ability to reload after each shot reached the level of an automatic repeat performance. (Saarelainen 2008: 23)

The Suomi's effect on the battlefield was not just its ability to mow down large numbers of troops; it was also psychological, contributing to the myth of the 'White Death'. Vesa Nenyé describes how the Suomi contributed to the hit-and-run tactics against the Soviets. During the Soviet retreat from Suomussalmi, at the end of December 1939 and beginning of January 1940, Brigade Commander Alexei Vinogradov's 44th Rifle Division was bunched up on the small forest road to Raate. Although some Ukrainian troops were supplied with skis to help counter the Finns' mobility, few of them really knew how to ski. As a result, most of the men abandoned their vehicles and tried to wade through waist-deep snow:

Furthering Vinogradov's dismay was the fact that his men were by now convinced that at any moment a flurry of snow-white would fall on them from the nearby forests, showering them with grenades. Often, these attacks were supported by snipers, who had orders to take out the officers first. Then, Suomi submachine-gun fire would rake the nearby tents and foxholes. Before the Soviets could muster any reinforcements or organize resistance the woods would go quiet again: the Finns had left as rapidly and silently as they had arrived. (Nenyé *et al.* 2015: 150)

Although the Suomi is primarily thought of in use in the offensive when ambushing Soviet troops, it was also used in the defensive role. Although Finnish bunkers normally had machine guns or artillery as their primary

A Finnish patrol under fire (overleaf)

During July 1943, a Finnish patrol in the Karelian Forest has come under attack from hidden Soviet troops. The Finnish troops offer a good example of the diversity of equipment used by the Finns to supplement their own industrial production. For example, three types of headgear are shown. Three of the troops wear the German-style M1917 helmet, applicable since the Finns were allied with the Germans. The figure second from the left wears the Finnish m/40 helmet, while the figure at right wears the Finnish m/36 cap. Weaponry is also diverse. The troops at left and centre are armed with the m/27 Mosin-Nagant rifle; the figure second from the left has the KP/-31 SJR with the muzzle brake; at the rear, second from the right, one soldier has the Lahti-Saloranta m/26 LMG; and the figure at right uses a captured Soviet PPSH-41 SMG. Since the PPSH-41 used the 7.62×25mm Tokarev round, which was only available in Finnish supply channels when captured, the user would have to search for ammunition from dead Soviet soldiers. Also visible are *puukko* knives and German-style 'potato-masher' grenades.





In April 1944, Finnish troops check their location; the Suomi SMGs are the SJR version and use the 50-round 'coffin' magazine. (SA-kuva)



weapon, the Suomi was an important adjunct to defend a bunker from close assault. Towers or cupolas were designed to house one or more Suomi gunners. The bunkers were also equipped with additional gun ports for close combat. Normally, a small shelf was built into the wall of the bunker under such gun ports, to hold several clips or ammunition drums. Defenders could use rifles, Suomi SMGs or Lahti-Saloranta m/26 LMGs for firing from these gun ports (Irincheev 2009: 12).

The Suomi continued to be an important weapon for the Finnish infantry throughout the fight against the Soviets; as of 1944 each nine-man infantry squad was issued three Suomi SMGs (Munter, Wirtanen & Banks 2016: 187). As good as the Suomi was, however, it could not stop Soviet attacks with overwhelming superiority in men, tanks, artillery and aircraft from battering the Viipuri–Kuparsaari–Taipale (VKT) Line in June 1944. Finnish tenacity slowed the advancing Soviets and the arrival of German reinforcements for the Finns steeled them for the massive battle at Tali-Ihantala on 28 June 1944. Nevertheless, despite additional reinforcements, the Finns had to retreat to new defensive lines. By 30 June, the Finnish lines had stabilized and the Soviet advance had been halted. The Finns reoccupied parts of the VKT Line and stabilized their defences. However, the Soviets had regained much territory that had been occupied by Finland early in the Continuation War, including East Karelia.

Although the Soviet offensive did not achieve all of its goals, it did lead to the Finns agreeing to peace terms in September 1944. Owing to battle losses, damage to weapons and the hiding of weapons in caches, by October 1944, a little over 40,100 KP/-31 SMGs remained in service. Once hostilities had ceased, Suomi SMGs were repaired and retrieved from weapons caches, bringing the total available, as of August 1951, to about 50,100, plus an additional 300 examples of the Korsu-Suomi. Over half of the total figure, about 27,800, were the SJR version with muzzle brake. The number of Suomi SMGs was increased in 1953 when 3,517 KP/-31 SMGs that had not been finished were purchased from Tikkakoski

OPPOSITE A Finnish soldier on watch north of Lake Ladoga in September 1944; at hand, he has various grenades and a spare magazine for his KP/-31 SMG. (SA-kuva)



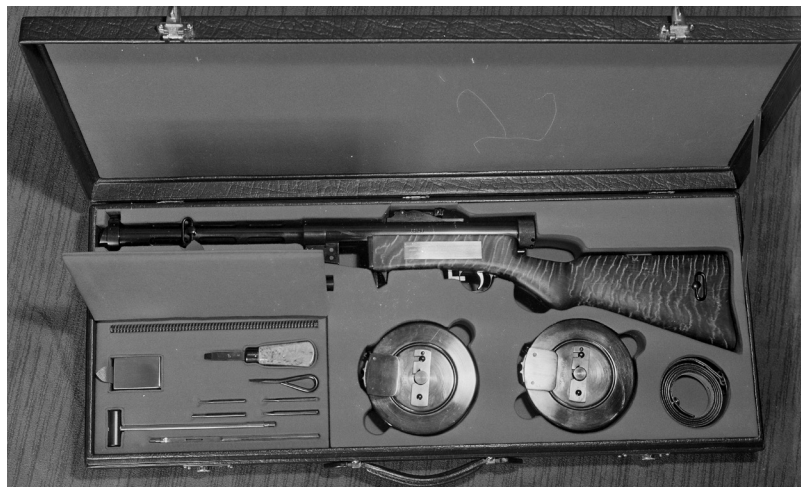
and completed. As of summer 1957, around 53,600 remained in the inventory of the Finnish armed forces (Jaeger Platoon 2013).

THE SUOMI IN GERMAN SERVICE

Initially, the Finns who joined the German forces as part of the Volunteer Finnish SS Battalion took some Suomi SMGs with them. Later, Marshal Carl Gustav Mannerheim, commander-in-chief of Finland's armed forces, visited Germany in June 1942, and donated an additional 120 KP/-31 SMGs, each with five drum magazines and 2,000 Finnish 9×19mm cartridges to the Germans. One was a presentation weapon for Adolf Hitler, who reportedly did shoot it at some point. The remainder were given to an officer of 20. Gebirgs-Armee-Oberkommando on 11 July 1942. Markku Palokangas, an authority on Finnish weapons, also states that another 180 Suomi SMGs were in the possession of Divisionsgruppe *Kräutler* in northern Finland.

On 12 March 1942, a licence was granted to supply Germany with 1,742 KP/-31 SMGs. This was followed with a licence for 1,100 more on 26 June 1942, and an additional 200 on 5 August 1943. It is not reported whether all were delivered. In light of the presentation Suomi given to Hitler, it is interesting that in June 1943, an order for 200 KP/-31 SMGs was received from the Private Chancellery of the Führer. As far as is known no KP/-31 SJR SMGs were exported to the Germans, only the standard KP/-31 model.

In addition to the Suomi SMGs supplied to Germany mentioned above, some KP/-31s were also supplied to Croatia and Bulgaria, both of whom were fighting alongside the Germans (Axis History Forum 2005). Soviet officers coveted the Suomi SMGs in use with Finnish forces and made use of captured examples if they could get them. Presumably, this was before the PPSH-41 was readily available, though the quality and reliability of the Suomi were well known (Munter, Wirtanen & Banks 2016: 60).



The KP/-31 presented to Adolf Hitler by Marshal Carl Gustav Mannerheim. (SA-kuva)



IMPACT

Redefining the submachine gun

THE SUOMI AND ITS COMPARATORS

Although the Suomi KP/-31 is frequently cited as one of the best SMGs of World War II, it is useful to compare it directly to four of its contemporaries that were designed in the pre-stamping days before or shortly after the start of World War II. As the US M1928 Thompson would have been available while the Suomi was in development, it offers the best model for comparison. The French MAS 38 is less well known than the other models, but it is noteworthy for some unique design features, most notably the long rearward travel of the bolt, past the sear, which necessitated a spring-buffered sear to prevent damage. Its cartridge, the 7.65×20mm French Long, is markedly underpowered for an SMG. The Italian Beretta Modello 1938A, one of World War II's most distinctive weapons, is also assessed here. Finally, the Soviet PPSH-41 is considered; although there are obvious Suomi influences on this weapon, notably in the 71-round drum magazine, there are also marked differences, especially in the Soviet weapon's use of a stamped receiver and barrel jacket.

Preparing to fire

Inserting the magazine in the Suomi can be a somewhat slow procedure, as it fits quite securely. When changing magazines, the relatively small magazine-release lever can also take some effort. It is surprising, given Finnish combat conditions, that a magazine-release lever more conducive to use with gloves or mittens was not chosen. (For that matter, it would have seemed sensible to design a winter trigger guard as well.) Once the magazine is in place, the hooked cocking lever offers a relatively good gripping surface, though a hand that is wet can slip off. Chambering a round may be carried out with the shooting hand by taking the hand off



A Finnish soldier in an entrenched position with a KP/-31 SJR; his practice of using the 50-round magazine as a monopod would not normally promote accurate shooting, but he is probably just resting it while observing and would presumably adopt a more effective firing position. This photo illustrates that the drum magazine not only had a higher cartridge capacity but also allowed a lower position when shooting prone. (SA-kuva)

the grip or with the support hand by reaching over the top of the receiver. Neither is an especially comfortable cocking manoeuvre. The safety is well located within the trigger and may be pushed with the trigger finger or the thumb of the shooting hand. All the way to the rear is safe, halfway is semi-automatic and full forward is full-automatic.

Preparing the Thompson SMG for action seemed complicated to the uninitiated but for the experienced user was quite logical and relatively quick. The M1928 has a separate safety and selector. The standard method taught by the Federal Bureau of Investigation and other US Government agencies was to put the selector on semi-automatic with the safety applied. However, as the Thompson fires from an open bolt, it must be cocked before the safety may be applied. Normally, if combat was considered imminent, the selector would be switched to full-automatic. Removing a magazine for a change is easy, as the magazine may be grasped and pulled free as the release is pushed. 20- or 30-round box magazines may be inserted into the Thompson simply by thrusting them up into the magazine well, but care must be taken that they are properly aligned. 50- or 100-round drum magazines must be slid in from the side, however. On the later M1 and M1A military versions, only box magazines can be used. Cocking the M1928 may be carried out efficiently with the support hand as the cocking lever is located atop the receiver.

The MAS 38's 32-round magazine is inserted by pushing the hinged cover for the magazine well forward to allow access to the magazine well.

OPPOSITE A Finnish soldier in winter camouflage blends with his environment as he waits for the enemy with his Suomi. (SA-kuva)



OPPOSITE A Finnish soldier aiming his KP/-31 from a rest and making use of the rear sight to engage a target more accurately at a distance. (SA-kuva)

The large knob on the KP/-31's cocking handle allows it to be manipulated while wearing gloves or mittens. (Author)

The magazine is then thrust upwards until it locks in place. To chamber a round, the non-reciprocating bolt handle is pulled to the rear until the bolt locks in the open-bolt firing position. Note that the cocking knob is relatively small, thus allowing the hand to slip off in wet or cold conditions. The MAS 38 has an interesting safety, which locks the bolt in either the open or closed position by pushing forward on the trigger. When the bolt is in the open position, pushing forward on the trigger actually folds it, preventing the SMG from firing until the bolt is folded down. One of the two folding peep sights can be selected for the range at which the SMG is expected to be fired.

Safety operation varied slightly in early- and later-production Beretta Modello 1938A SMGs. In the later version, with which the author is most familiar, there is a safety catch on the left side above the twin triggers and also a crossbolt safety on the right behind the trigger guard, which when engaged blocks the full-automatic trigger and only allows semi-automatic fire. Note the mention of two triggers: a forward one for semi-automatic fire and a rear one for full-automatic fire. Normally, in preparing for fire the crossbolt safety would not be engaged. The straight magazine is inserted by thrusting it upwards into the magazine well. A round is chambered by pulling back the cocking handle, locking the bolt open. The cocking handle is then pushed forward and held in the forward position by a catch, as it is non-reciprocating. The knob of the cocking handle is relatively small, making it likely that the hand can slip off if care is not taken. Normally, the tangent rear sight, with settings between 100m and 500m, would be set for 100m when patrolling or performing security duties.

As is typical of Russian weapons, the loading and firing drill for the PPSH-41 is relatively simple. Either the 71-round drum magazine or the curved 35-round box magazine is inserted into the magazine well and pushed until it locks. There is a safety catch on the cocking handle that locks the bolt either forward or to the rear. To prepare for firing, this catch must be released. The bolt may then be pulled to the rear, cocking the weapon, as it is an open-bolt design. The selector switch is located inside the trigger guard, rear being the semi-automatic position and forward the full-automatic position. Although earlier models had a tangent sight, after 1942 a leaf sight with settings for 100m and 200m was used. Normally, the sight will be kept at the 100m setting.

Accuracy and firepower

The Suomi's greatest advantage over contemporary SMGs was its accuracy. Supplied with two fitted barrels, the Suomi could be used for hunting small game or medium-range sniping on semi-automatic and in skilled hands.

Its rear sights could be set for 100m, 200m or 300m.

With the 71-round drum or 50-round box magazine, the Suomi offered a high rate of fire and good stability and controllability when



set to full-automatic – advantages the Finns exploited in hit-and-run attacks while on skis.

The Thompson compares quite favourably with the Suomi in accuracy, though it was not designed for actual Match usage, as was the Finnish SMG. The ability to fire the Thompson on semi-automatic in combination with its longer-range ladder rear sight aided accuracy. When firing on full-automatic, the lower cyclic rate of the M1928 – 600–725rd/min – also aids accuracy. Theoretically, at least, the Cutts compensator, a type of muzzle brake, helps dampen muzzle climb, which also improves accuracy. In reality, as with most SMGs, to fire the Thompson accurately at distances in excess of 25m, semi-automatic should be used. Although 50- and 100-round drum magazines were available for the Thompson, the 100-round drum was rarely used due to weight and bulk. With the 50-round drum the Thompson is more usable, though this magazine holds considerably fewer rounds than the Suomi's 71-round drum magazine.

The MAS 38's rear folding peep sight combined with the slotted front sight allow much better target acquisition than with many SMGs. The angle of the stock to the sights also allows a good cheek weld when shooting, thus aiding accuracy. The 32-round magazine gives the MAS 38 reasonable firepower, but the anaemic cartridge requires the ability to fire bursts to enhance stopping effect. Fortunately, the negligible recoil and good sights aid in firing relatively accurate bursts at normal SMG engagement range.

Various factors contribute to good accuracy with the Beretta Modello M38A. The ability to use the semi-automatic trigger and to set the sights for varying distances also help accuracy at longer ranges, though the M38A is not as well designed for shooting past 100m as is the Suomi. When firing on full-automatic, the muzzle brake built into the barrel

shroud helps control muzzle climb. The largest-capacity magazine for the M38A holds 40 rounds, giving reasonable firepower; 10-, 20- and 30-round magazines are also available.

The KP/-31 rear sight was designed to allow accurate shooting to 500m. (Author)





LEFT & BELOW Accuracy of the KP/-31 could be enhanced by shooting either prone or from a kneeling rest. (SA-kuva)



Although the two-position sight most often encountered on the PPSH-41 was not designed for pinpoint accuracy, it did have the advantage of protective ‘ears’ so that it was less likely to be damaged during rough usage. The front post sight is also protected. The fact that the PPSH-41 offers a semi-automatic capability also aids in accurate shots. The bolt



The Suomi's safety may be operated readily with the trigger finger or pushed to fire while wearing mittens. (Author)

buffer dampens recoil effect to some extent, and the slant at the front of the barrel jacket acts as a rudimentary muzzle brake, which aids accuracy in burst fire, though when placing a shot is desired, semi-automatic would normally be used. This is especially true as the cyclic rate is 900rd/min. The 71-round drum magazine gives the PPSH-41 substantial firepower.

Safety considerations

The safety/selector of the Suomi seems effective, but as with all open-bolt SMGs, great care must be taken. The safest way to carry a KP/-31 is with the bolt forward and the selector in the 'safe' position. With the weapon on safe it will not be possible to pull back the cocking lever, however. If carried on semi-automatic with the bolt forward on an empty chamber, the Suomi may be quickly cocked and a single shot fired or the selector moved to full-automatic. Drum magazines may require that the bolt be cocked for insertion, in which case the weapon would have to be carried with the bolt open and on safe. Normally, box magazines may be inserted with the bolt forward, thus allowing the Suomi to be carried with the bolt forward on an empty chamber.

The same comments apply to the Thompson that would apply to other open-bolt SMGs. Once the bolt is cocked with a loaded magazine, if the



weapon is dropped or heavily jarred, it is possible for it to fire a full magazine without stopping. That is why most experienced users carried it on the semi-automatic setting so that only one round could accidentally fire. The Thompson's safety has a reputation for being reliable, but no safety is 100 per cent reliable and the user must always be aware. Another option would be to carry the Thompson with the bolt forward and a full magazine in place. Even so, a heavy enough jar or catching the cocking handle on a branch could make the weapon ready to fire.

The ability to lock the MAS 38's bolt either open or closed is a major plus for safe carrying of the weapon. On the other hand, the fact that the safety folds forward when applied with the bolt open means that the user must remember to rotate it into the firing position before engaging a target. The use of dual triggers as well as a manual safety makes the M38A quite safe, as open-bolt SMGs go. Operation of the PPSH-41 safety was discussed above, but it should be emphasized that for an open-bolt SMG, the PPSH-41 is relatively safe as it can be carried bolt forward on an empty magazine with the bolt locked.

The KP/-31's magazine release is protected from being pushed inadvertently but allows ease of operation while wearing gloves or mittens. (Author)

Handiness in the field

The foremost complaint by Finnish troops about the Suomi was its weight: a little over 7kg with a fully loaded 71-round drum magazine. On the

positive side, the sling swivels are well-located on the side of the SMG to allow it to be comfortably slung across the chest to distribute weight. It should be noted that Finnish troops mitigated the weight of the Suomi to some extent by firing it from the hip. In dampening recoil, the weight of the Suomi proved advantageous.

At 85cm in overall length, the Thompson M1928 was actually slightly shorter than the 87cm Suomi (92.5cm for the SJR version). With a fully loaded 50-round drum magazine, the Thompson weighed 7.16kg, slightly heavier than the Suomi with a 71-round drum magazine, at 7kg. The primary consideration in evaluating the weight is whether one would prefer 50 rounds of .45 ACP or 71 rounds of 9×19mm ammunition. An aid to carrying the Thompson is the Kerr sling usually installed on military versions, but this sling was designed for over-the-shoulder carry. The Suomi sling, designed for across-the-chest carry, is much handier in the field, especially for ski troops.

As has already been mentioned, the MAS 38's safety system allows it to be carried with relative safety in the field, always a most desirable characteristic in a combat weapon. At 62.5cm in overall length, the MAS 38 is quite handy. Its loaded weight of 3.56kg also makes it a handy weapon to carry for extended periods and allows it to be brought into action quickly. The ability to mount a sling to side swivels also allows ready carry across the chest.

At 94.5cm overall, the Beretta Modello M38A is the longest of the four SMGs being compared. At 3.98kg with a loaded 40-round magazine, it was lighter than the other weapons under consideration except the MAS 38. The ability to use a shorter magazine when moving through heavy brush or in a vehicle is an advantage for users of the M38A in the field, as is the ability to cover the port in which the cocking handle travels by pushing it forward after cocking. Unlike most SMGs, the M38A ejects to the left, but the ejection port is far enough forward that empty cases do not hit the right-handed shooter. The side-mounted sling swivels are useful as they allow the M38A to be slung across the chest for ready access.

Various positive factors made the PPSH-41 quite usable for the Soviet infantryman. It was designed to be durable and need little maintenance, yet if maintenance was needed, the bolt could be removed quickly and the barrel and chamber cleaned easily. As the barrel was chrome-lined, the effects of firing corrosive ammunition were greatly mitigated. The PPSH-41 was a bit handier than the Suomi, being 84.3cm in overall length and weighing only about 4.3kg with the 35-round box magazine. The 71-round drum magazine increased the weapon's weight to 5.45kg, but this is still more than 1.5kg less than the Suomi.

The author's experience

The author has found the Suomi to be quite accurate, though he finds that it is much easier to shoot accurately at distances past 25m if the weapon's forearm is resting on another surface. This is in part because of the weight of the weapon. The sights are quite usable. Trigger pull is acceptable for a World War II SMG. Despite a relatively high cyclic rate (750–900rd/

OPPOSITE The KP/-31 lent itself to ready carry across the chest while using various types of transport, including horses and motorcycles. (SA-kuva)



min), the KP/-31 is controllable. The KP/-31 SJR version with the muzzle brake is more controllable than the version without.

I have to admit to a prejudice in favour of the Thompson. One of the first SMGs I ever fired was a Thompson and I've enjoyed firing them whenever I get a chance. I find the ergonomics good and the sights quite usable. Recoil with the .45 ACP round is noticeable, but I find that a Thompson equipped with a vertical foregrip is controllable on short bursts. When I have fired the military M1 or M1A1 without the vertical foregrip, I have definitely noticed muzzle rise more. Although the weight and length of the Suomi and Thompson are similar, the Thompson feels more comfortable in my hands, but this may be the result of greater familiarity. As with the Suomi, the Thompson may be fired effectively from the hip at close range.

I can only remember firing the MAS 38 once, but I found it handy, comfortable to shoot and accurate for an SMG. Its sights are an aid to shooting it well. (I would note that my experience has been that French military weapons have normally shown good accuracy.) I did have to remind myself to apply the trigger safety or to take it off prior to firing. With use I would assume that this becomes instinctual. As mentioned previously, the great disadvantage is the underpowered cartridge. For purposes of shooting the MAS 38 today, it should also be pointed out that the 7.65×20mm French Long cartridge has become hard to find.

When firing the M38A or the M38/42, which I have fired more, I have consistently been impressed with its reliability, due in good part to its double-column, double-feed magazine. I have also found that the SMG balances well and is quite controllable in burst firing – the result of the 9×19mm chambering, solid-wood stock and compensator/brake. Its relatively low cyclic rate of 600rd/min helps in controlling the M38A.

I have found that the PPSH-41 seems handier than the Suomi and is easier to shoulder quickly and fire a shot or shots. I like the location of the selector switch in front of the trigger as it can easily be operated with the trigger finger, especially if kept on semi-automatic, as it may then be nudged forward with the finger to the full-automatic position. The ability to lock the bolt either forward or back is another positive feature. In firing bursts, I find that the slanted muzzle brake seems to dampen muzzle climb at least somewhat, though when firing more than a few rounds, the muzzle still comes off target. The lighter 7.62×25mm Tokarev round shows less recoil but is louder, which can be distracting when firing. The sights of the PPSH-41 are not as good as those on the Suomi or M1928 Thompson, but the PPSH-41 is intended as a massed-fire weapon for shock infantry, not a precision firearm. I also have always liked the PPSH-41's chromed bore, as I did not have to worry about using corrosive ammunition.

EXPORT AND LICENSED VERSIONS OF THE SUOMI

There have been references to the Suomi being used during the Spanish Civil War, but details are somewhat scant. Shipment of Suomi SMGs from Finland aboard the freighter SS *Yorkbrook* have been mentioned in



various sources. Interestingly, however, there is some controversy over whether these weapons were being sent to the Republicans or the Nationalists. According to one source, the weapons were unloaded in the Basque town of Bermeo and used by members of the *Eusko Gudarostea* (Basque Army), which fought on the Republican side (Axis History Forum 2006–09).

The Suomi design exerted an influence on countries outside of Finland that used the SMG. Those Suomis that went to Germany have already been mentioned, as have the more than 5,000 that went to Bulgaria. Other export orders between August 1940 and November 1942 included 380 to Sweden, 32 to Denmark, 500 to Croatia (with another 750 ordered but likely not delivered) and 100 to Switzerland (another 5,000 were ordered but it is not clear how many were delivered). Those orders not fulfilled were the result of priority being given to production for the Finnish armed forces. For this same reason, an order for 5,000 Suomi SMGs from Romania during 1942 was not fulfilled. Other countries that expressed interest in the Suomi and in some cases tested it included France, Britain and the United States (Jaeger Platoon 2013).

A substantial number of Suomi SMGs were also manufactured under licence, with the most prolific producer being Sweden. Initially, at the Husqvarna factory, Sweden produced the kpist m/37, which was chambered for the 9×20mm Browning Long cartridge used in Swedish service handguns. Only a limited number were produced, however, as the Swedes soon switched to the 9×19mm cartridge. The model with the new chambering was designated the kpist m/37-39. There were some distinct differences between the Finnish KP/-31 and the Swedish kpist m/37-39. These included a different stock, a shorter barrel and barrel jacket, and simpler sights. The kpist m/37-39 was produced from 1939 until the mid-1940s. It was primarily used with the 50-round 'coffin' magazines, though later it was used with the 36-round box magazines for the Carl Gustav m/45 SMG. Sweden exported the kpist m/37-39 to Norway, Denmark, Indonesia and Egypt. The Swedes also had what was designated the kpist

Swedish kpist m/37-39, right-side view. The kpist m/37-39 was made under license by Husqvarna Vapenfabriks AB. It was designated kpist m/37 and was initially produced in 9mm Browning Long (9×20mm) calibre, which was the chambering of the Swedish Browning service pistol. However, in 1939, the chambering was changed to 9×19mm Parabellum. In this chambering, it was designated the kpist m/37-39. The kpist m/37-39 was most often used with the 50-round Swedish 'coffin' magazine, though other types of magazine would fit it. (© Royal Armouries PR.7391)



Hispano-Suiza MP 43/44, right-side view. The Hispano-Suiza version of the Suomi was produced in Switzerland as the MP 44. The Swiss originally ordered 5,000 Suomi KP/-31 SMGs, which they designated the MP 43. These guns were standard Finnish Army KP/-31 weapons without the muzzle brake. The Swiss also produced an estimated 22,500 SMGs on license from Finland. The weapon produced in Switzerland was designated the MP 44. This version was used by the Vatican Swiss Guards until the 1970s. The MP 44 was very similar to the standard KP/-31, but it did have a simplified L-type, two position, flip-up rear sight. (© Royal Armouries PR.7395)

m/37-39F, a designation applied to the KP/-31 SMGs that had been imported from Finland.

During World War II, Denmark also produced the Suomi as the m/41 for the Danish Army. The primary differences from the Finnish KP/-31 were in the stock and the front sight, which had protective 'ears' on each side. About 1,400 m/41 SMGs had been produced before the Germans completely disarmed the Danish Army and seized the m/41s. At least some were later issued to Danish collaborators.

The Swiss used a substantial number of Suomi SMGs. Those Tikkakoski-made KP/-31s they had imported from Finland were without the muzzle brake and were designated the MP 43 in Swiss service. As part of their November 1942 contract with Finland, the Swiss had also obtained a licence to produce the Suomi in Switzerland. Production was carried out by Hispano-Suiza, with an estimated 22,500 SMGs delivered. These weapons were designated the MP 43/44. They were very similar to the Finnish KP/-31 except for the rear sight, which was of 'L' type with settings for 100m and 200m. Among the more interesting users of the MP 43/44 were the Pontifical Swiss Guards, who used them from World War II until they were replaced by the Heckler & Koch MP5 in the 1970s.

There were also at least a few Soviet copies of the KP/-31 – obviously not licensed! Designated the KF-42 (KF for Karelo-Finskii), the Soviet copy was chambered for the 7.62×25mm Tokarev round and was manufactured in Leningrad.

A few of the export and licence-produced Suomi SMGs seem to have ended up in Finnish hands. Some kpist m/37-39 SMGs in Finnish hands during the Continuation War were probably brought from Sweden by volunteers during the Winter War. Reportedly, there were also a few Croatian and Bulgarian weapons that ended up in Finnish arsenals at some point (Jaeger Platoon 2013).

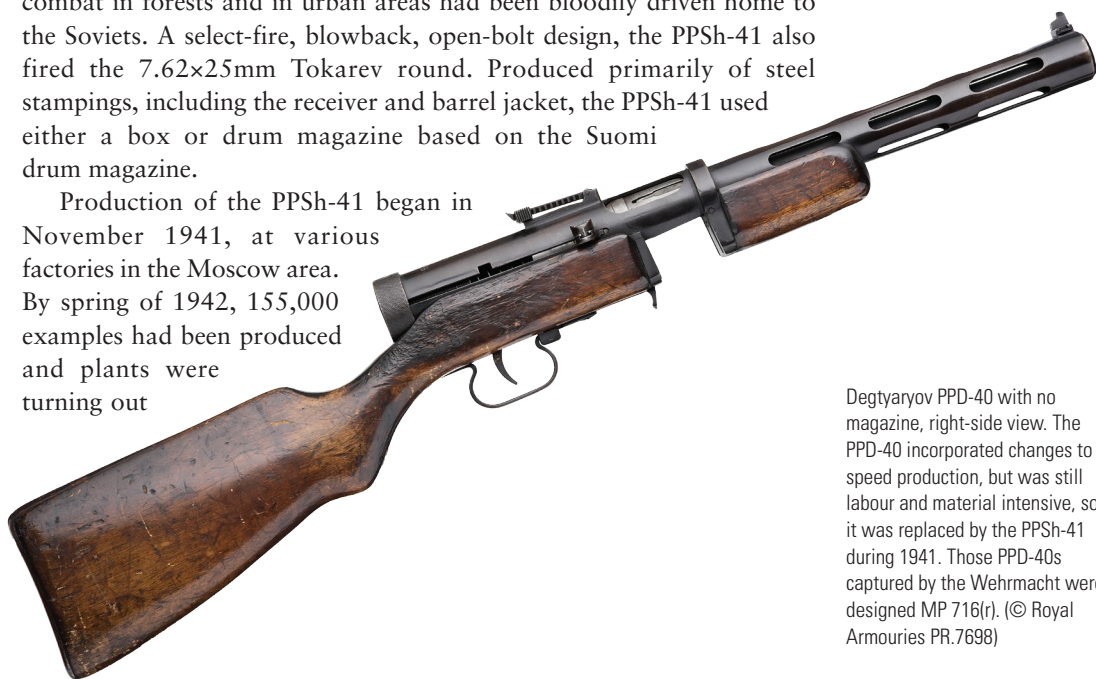
THE PPD-40 AND PPSH-41

Although the Soviets did not use it especially effectively during the Winter War, they did have an SMG available in the form of the PPD-40. PPD stands for 'Pistolet-Pulemyot Degtyaryova' (Degtyaryov's Machine Pistol). Designed by Vasily Degtyaryov, best known for the DP-28 LMG, the PPD was chambered for the 7.62×25mm Tokarev round. The PPD-34/38 owed some design features to the Suomi and others to the German MP 28/II. Notable among the features owed to the Suomi are the 71-round drum magazine and the barrel jacket. The PPD-40 uses an open magazine well similar to the type featured on the KP/-31.

Although the PPD-34/38 officially entered service in 1935, only a few thousand had been produced by 1939. Production was actually stopped in 1939, but due to the impressive performance of the Suomi in the Winter War and the lack of a Soviet equivalent, production of the PPD-40 resumed in 1940, with 81,118 being produced in that year, though only 4,174 PPD-34 and PPD-34/38 SMGs had been produced prior to 1940 (McNab 2014: 8). Production of the PPD-40 took place at the Sestrorjetsk and Tula arsenals (Nelson 1977: 592). In 1941, only 5,868 PPDs were produced as production began of the PPSH-41, which was cheaper and less labour-intensive to manufacture. Originally, the PPD-40 had a 25-round box magazine, but in later versions this was replaced by a 71-round drum magazine based on the Finnish design and of the type used in the PPSH-41 (Hobart 1973: 166). The Finns captured some PPD-34/38 and PPD-40 SMGs, which were issued to non-front-line troops such as coastal-defence troops and the Home Guard.

Designed by Georgy Shpagin, the PPSH-41 was intended to be more easily and cheaply produced to supply the large number of conscript troops in the Soviet Army. The Suomi had a direct influence on the development of the PPSH-41, as the effectiveness of an SMG during close combat in forests and in urban areas had been bloodily driven home to the Soviets. A select-fire, blowback, open-bolt design, the PPSH-41 also fired the 7.62×25mm Tokarev round. Produced primarily of steel stampings, including the receiver and barrel jacket, the PPSH-41 used either a box or drum magazine based on the Suomi drum magazine.

Production of the PPSH-41 began in November 1941, at various factories in the Moscow area. By spring of 1942, 155,000 examples had been produced and plants were turning out



Degtyaryov PPD-40 with no magazine, right-side view. The PPD-40 incorporated changes to speed production, but was still labour and material intensive, so it was replaced by the PPSH-41 during 1941. Those PPD-40s captured by the Wehrmacht were designed MP 716(r). (© Royal Armouries PR.7698)

around 3,000 per day. As compared to other designs, which had undergone trials, the PPSH-41 used 87 parts compared to 95 for the PPD-40 and required only 7.3 machining hours compared to 13.7 for the PPD-40 (Coldhand Arms; no date). In addition to being easier and cheaper to produce, the PPSH-41 proved more reliable in the field and quicker to disassemble for maintenance, though like many Soviet weapons it was designed to need little maintenance.

Early models employed a tangent leaf rear sight, but in 1942, this was changed to an L-shaped flip sight marked to 100m and 200m. Later versions used a sliding selector switch located within the trigger guard. The cocking handle may also be locked in the forward or rearward position. Although the PPSH-41 drum magazine appears similar to that of the PPD-40, they are not interchangeable (Hobart 1973: 166).

THE KP m/44

A large number of PPSH-41s were captured during the Continuation War. In many cases, these were used by Finnish troops who found sufficient ammunition available from killed Soviet troops or captured ammunition depots. When they could no longer find 7.62×25mm ammunition, which was not available within the Finnish supply system, they normally discarded the 'Pepesha guns', as the Finns termed them.

Many of the captured PPSH-41s were stockpiled at Finnish arms depots. Attempts were made to convert them to 9×19mm calibre by replacing the barrel and altering the magazine well to take Suomi magazines, but the modification proved difficult due to the 7.62×25mm Tokarev cartridge being significantly longer than the 9×19mm cartridge. To alter the magazine well it was necessary to split the receiver, thus weakening it. Ironically, the Soviet PPSH-41 magazines would feed 9×19mm cartridges without alteration, but this was not discovered until later. Re-boring PPSH-41 barrels also proved difficult, as the chrome-lined bore destroyed drill bits. When barrels were re-bored, dimensions were often oversized or too rough. As a result, only a limited number of conversions were ever attempted.

In 1943, the Finns examined captured Russian PPS-43 SMGs and found that the use of stampings and a metal folding stock instead of the wooden stock used on the KP/-31 would both reduce costs and increase production if modified for Finnish usage. Finnish weapon designers Tuure Salo and Esko Kekki modified the design to take the 9×19mm cartridge instead of the Soviet 7.62×25mm cartridge.

Willi Daugs, who managed Tikkakoski Oy during World War II, was a great promoter of the Finnish version of the PPS-43. Daugs was responsible for selling the rights to manufacture the Suomi to Hispano-Suiza and also was responsible for obtaining the rights to produce the 50-round Suomi magazine from Sweden (Nelson 1977: 569). In November 1943, in trials against other SMGs, the modified PPS-43 performed well. Scarcity of materials forced Tikkakoski Oy to wait until the summer of 1944 to produce 36 prototypes for further evaluation, however. Once the



At top the PPS-43 and at bottom the KP m/44; note the difference in the magazine wells, which allows the KP m/44 to take the 71-round drum magazine. (Author)

testing was completed, production began. One important consideration in the design of the Finnish PPS-43, which would come to be designated KP m/44, was that the 71-round drum magazine used in the KP/-31 had to work in the KP m/44.

Many features of the PPS-43 were retained in the KP m/44. These included the capability to fire on full-automatic only, the folding metal stock/buttplate and the rudimentary muzzle brake. The rear sight is the same L-shaped design marked for 100m and 200m. Adjustments to zero the sights are made to the front sight.

In August 1944, the first major order for the KP m/44 was placed, for 20,000 units at 749 Finnish Marks each – about half the cost of a KP/-31. Had the KP m/44 reached full mass production, that price would have dropped even further, perhaps to one-quarter that of the Suomi. The fighting against the Soviet Union during the Continuation War ended on 19 September 1944, however, resulting in the order for the KP m/44 being cut to 10,000 units. The Finnish armed forces considered producing another 11,000 KP m/44s in 1956, but in 1957/58, the Finns traded surplus Italian M/38 rifles as well as some Swedish and French machine guns for 76,115 Sten SMGs, thus negating the need for additional KP m/44s (Jaeger Platoon 2013). Deliveries of the KP m/44 began in early 1945, so it is unlikely that the weapon actually saw combat. Those examples delivered to the Finnish Army stayed in armouries until the 1960s or 1970s, when the Valmet M62 was adopted (Heidler; no date).

Finnish troops who encountered the KP m/44 nicknamed it the 'Pelto-kp' – 'Sheet-Metal Machine Pistol'. One point in favour of the KP m/44 with Finnish troops was that it was substantially lighter than the Suomi – 2.95kg rather than 5kg. The lighter KP m/44 balanced less well with the heavy 70-round drum or 50-round 'coffin' magazine, however, based on the author's firing of the weapon. Reportedly, the Finns used the KP m/44 as a training weapon for decades after World War II. It was also an issue weapon to Finnish border guards and to Finnish troops assigned to United Nations peacekeeping missions, including during the Suez Crisis of 1956.

SEMI-AUTOMATIC SUOMI PARTS GUNS FOR THE US MARKET

Although surplus Suomi SMGs cannot be sold on the US market, other than those imported prior to a certain date or a very small number that would be available for law-enforcement or military sales, a large number of parts kits have been imported with receivers that have been cut so that they may not be used. Most of the kits the author has seen came from TNW Firearms in the United States. Many were actually retailed by Century International Arms. For legal semi-automatic 'rifles' to be manufactured using these kits, they must have a US-made receiver, a barrel of at least 16in (406mm), and a certain number of US-made parts. Reportedly, some of the kits were shipped with original 12in (305mm) barrels with an added extension to reach the 16in requirement, while others had newly made 16in barrels. The bolt also appears to have been modified to fire only on semi-automatic, not on full-automatic. Unlike original KP/-31 SMGs, which were blued, the parts kit guns are normally Parkerized.

Based on the author's testing of the semi-automatic Suomi, it is reliable and accurate. The Parkerizing seems to make the bolt especially hard to pull back, however. Most noticeable, though, is the abominable trigger pull. Some collectors purchased the parts kits and US-made receiver and built them themselves, while others purchased KP/-31 rifles that had been assembled as legal semi-automatics. The parts KP/-31 actually proved quite popular with shooters and collectors of World War II weapons. The ready availability of drum and 'coffin' magazines merely added to the popularity of the KP/-31 semi-automatics.

The Century International Arms semi-automatic version of the Suomi takes the various types of Suomi magazines. To make the minimum legal barrel length of 16in (406mm) for a 'rifle' in the United States, the Century version has an extension protruding from the muzzle brake. (Author)





CONCLUSION

Arguably, the greatest influence of the Suomi was its effect on other countries' doctrine for the use of the SMG. The SMG had been viewed as a trench-assault weapon during World War I and between the wars was seen primarily as a weapon to arm security or support troops. The Finns proved that the SMG, specifically the KP/-31, could be a very effective combat weapon when used by troops capable of carrying out hit-and-run attacks or firing from a concealed position on groups of enemy soldiers.

In the influential book *Textbook of Automatic Pistols*, R.K. Wilson and I.V. Hogg comment on the effect use of the Suomi had on Soviet weapons designers and on the future use of the SMG in the Soviet Union:

The Winter War against Finland in 1940 opened Russian eyes to the possibilities inherent in the sub-machine gun purely as an infantry weapon. Prior to this, it seems, it had been considered a specialist weapon. An even simpler design was consequently needed for mass-production, and Degtyarev produced his PPD40 model. This was basically the same as his 1938 design but with a simpler form of drum magazine and incorporating small changes which, although they had little or no effect on the operation of the weapon, made production by the million an easier and more economical proposition. (Wilson & Hogg 1975: 352)

Drawing conclusions about the Suomi is both easy and complex. Its combat record was well proven, to the extent that it is generally included on lists of the most effective infantry weapons of the World War II era. Its influence on the Soviet PPSH-41 and on Soviet tactics is also fairly well accepted. Its symbolic value is a little harder to quantify. For the Finns, the Suomi's ability to even the odds against overwhelming Soviet force with a drum magazine full of 9mm ammunition as a ski-borne dispenser

of 'White Death' cannot be overstated as a symbol of dogged resistance against the odds.

Based on reports of war correspondents covering the Winter War, many of whom had little technical firearms knowledge, the Suomi was easily recognizable and was often mentioned when discussing Finnish ski troops and Finnish *motti* tactics. Certainly, its devastating use in hit-and-run tactics had a psychological effect on Soviet troops fighting in the desolate, cold forests of Arctic Finland without proper clothing or enough food. Some machine guns have been nicknamed 'The Grim Reaper', and if reports of Soviets killed in the Winter War and Continuation War are considered, the Suomi was a very grim reaper indeed.

On a personal note, the author has had contact with younger Finnish military and law-enforcement personnel who today are armed with Valmet rifles and Glock pistols. If they use an SMG, it is usually a Heckler & Koch MP5, but they all know about the Suomi and speak of it with affection and some awe, much as Americans might speak of the M1 Garand rifle or the Colt M1911 pistol. Among Finnish weapons collectors the Suomi is a prized addition to any collection, though in most cases such examples have been deactivated.

The mystique of the Suomi is present outside of Finland as well. When a large number of KP/-31 parts kits (from Suomi SMGs with cut receivers) came into the United States and were assembled into semi-automatic carbines, they proved very popular with shooters and collectors. Among US collectors of machine guns, as well, the Suomi is highly thought of, both because of its history and its effectiveness. Although the author has not found a lot of information as to the Russian assessment of the Suomi, Russian firearms experts he has consulted seem to think highly of the famous weapon of their old enemy. In fact, the primary criticisms of the Suomi are usually that it was heavy and expensive to produce, not that it was unreliable or inaccurate. On the contrary, almost anyone who has fired the Suomi notes that it is more accurate than the typical SMG. Even the US parts guns assembled on US-made semi-automatic receivers were usually quite accurate.

For the Finns, the capacity of the Suomi to act as a force multiplier cannot be overstated. Mobilizing manpower, and womanpower, was difficult for the Finns given their small population. Mobilization also meant that those fighting could not harvest crops or work in industry. Henrik Lunde makes the point that, by the time of the Continuation War, the Finns' mobilization capabilities had improved substantially:

One of the most important improvements dealt with mobilization. New procedures instituted in the short period since the end of the Winter War resulted in the ability to field almost twice as many operational units. By the time the ground war began Finland had about 500,000 men under arms, an amazing feat for a country with a population of four million. When military construction and men and women auxiliaries are included, the number of individuals involved in the military or military-related activities amounted to 630,000 or over 15% of the population. (Lunde 2011: 153)



To put the number of Finns mobilized into perspective, Lunde, in a footnote, points out this would be the equivalent, as of 2011 when he was writing, of the United States mobilizing 45,000,000 troops. Still, many of the Finns that were mobilized were armed with bolt-action rifles. Having learned from the Finnish use of the Suomi in the Winter War, a larger number of Soviet troops now had SMGs, making the Suomi an even more important weapon for countering the Soviet numerical superiority in personnel.

A quotation attributed to a Finnish officer about the effectiveness the Finns showed at killing Soviet soldiers also summarizes the Finnish fighting spirit, which was exemplified by the Suomi SMG: ‘The wolves will eat well this year.’

The ‘White Death’ personified: a KP/-31, snow camouflage and a determined gaze. (SA-kuva)

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A Suomi presented to Jaeger Battalion 1 by Marshal Mannerheim for heroism during battles north of Lake Ladoga. Ten weapons were purchased personally by Mannerheim to be given to units that distinguished themselves. They were then issued to outstanding soldiers in the unit. (SA-kuva)

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Editor's note

Metric measurements are used in this book. For ease of comparison please refer to the following conversion table:

1km = 0.62 miles
1m = 1.09yd / 3.28ft / 39.37in
1cm = 0.39in
1mm = 0.04in
1kg = 2.20lb
1g = 0.04oz / 15.43 grains

Front cover, above: The KP/-31 SJR version of the Suomi.
(© Royal Armouries PR.7657)

Front cover, below: A Finnish soldier on watch armed with his Suomi; he wears mittens, as is to be expected in the Arctic winter, but what is surprising about the Suomi is that it was not produced with a winter trigger or a trigger guard that could be pushed to the side to enable firing with mittens. (SA-kuva)

Title-page image: During July 1941, a Finnish soldier takes aim from cover with his KP/-31. (SA-kuva)